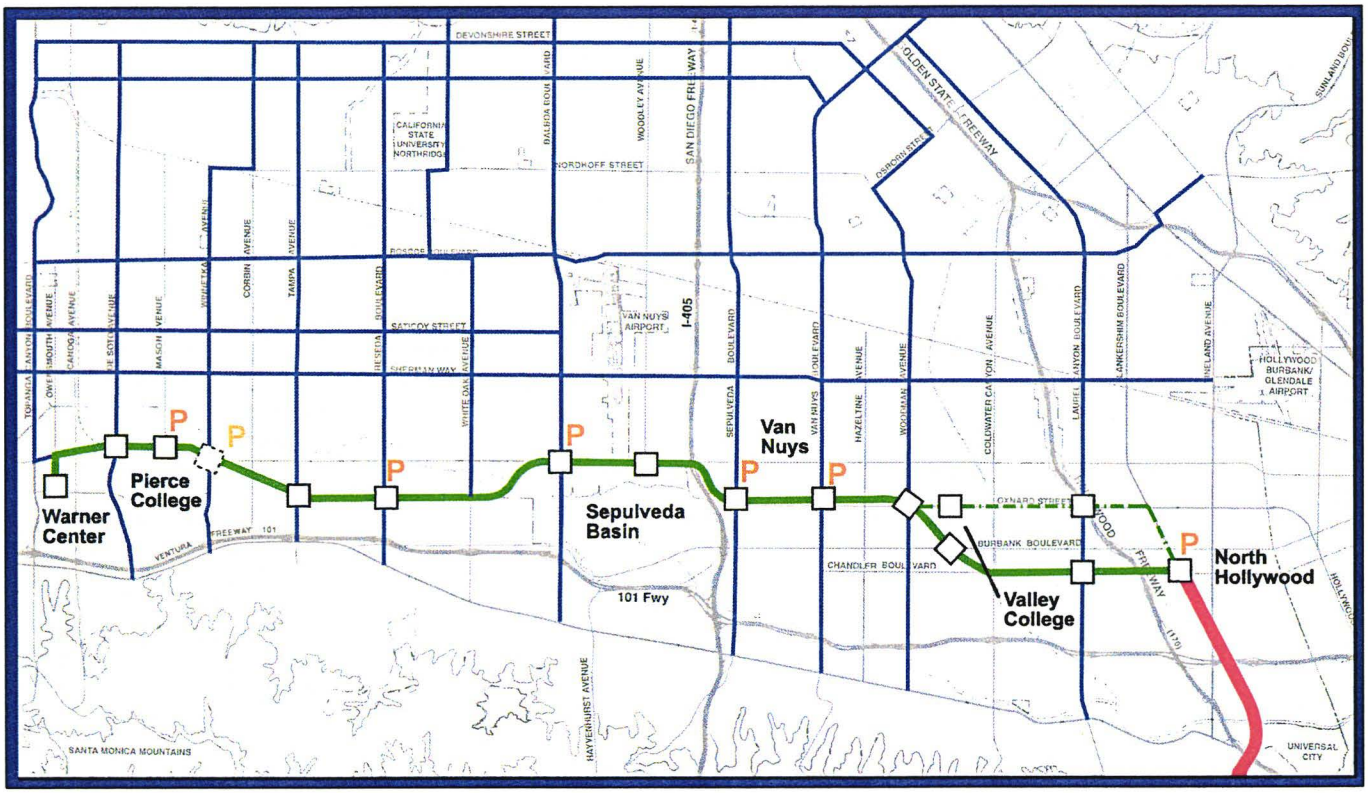
Revised Final Environmental Impact Report
Volume 5 – Chapter 9 (Book 2 of 6)



SAN FERNANDO VALLEY EAST-WEST TRANSIT CORRIDOR

Metro
Los Angeles County
Metropolitan Transportation Authority (MTA)

December 2004

EXHIBIT I

THOMAS A. RUBIN RESUME

THOMAS A. RUBIN, CPA, CMA, CMC, CIA, CGFM, CFM

STATEMENT OF QUALIFICATIONS

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THOMAS A. RUBIN, CONSULTANT

I have been engaged as a self-employed consultant and author for the periods June 1994 to July 1995 and since June 1996. During these times, my clients have included:

- Since June, 2001, I have been working with the School Construction Bond Citizens' Oversight Committee for the Los Angeles Unified School District, assisting them in overseeing the expenditure of almost $10 billion in proceeds from three voter-approved bond issues, and over $5 billion in funding from other sources, for renovation of existing schools and construction of new ones, one of the largest construction program currently underway in the United States.

- NAACP Legal Defense and Educational Fund, Inc. (LDF) – Beginning in September 1994, I served as an expert in the Federal *Labor/Community Strategy Center* (L/CSC) *et al v. Los Angeles County Metropolitan Transportation Authority* (MTA) *et al* Title VI (discrimination in the utilization of Federal grant funds) class action lawsuit. As part of my work, I prepared several declarations and two expert reports, advised plaintiffs and counsel on transit operations and financial matters, and made written and oral presentations to the MTA Board of Directors, the State Senate Transportation Committee, the California Transportation Commission, and the mediator appointed by the Court. I was also deposed by defense counsel for four days regarding my expert reports and assisted plaintiff counsel in its deposition of defendant personnel. After two years of intensive pre-trial preparation, and a preliminary injunction largely granting the plaintiff's requests, the suit was settled on terms highly favorable to the plaintiff. The plaintiff's requested remedy was changes in MTA project funding, transit service quality and quantity improvements, and transit fare policies and practices, rather than monetary damages. The dollar value of the shift of funding has been estimated in a range of over $700 million (defendants) to $1.5 to $3 billion (plaintiffs).

  The reduced fares, reduction in overcrowding on buses, new bus routes, and other transit improvements required by the Consent Decree have resulted in a total turnaround of MTA transit ridership. In the eleven years prior to the execution of the Consent Decree in late 1996, MTA had lost an average of over 12 million riders years; in the six years following the Consent Decree, MTA added an average of over 13 million riders a year.

  I have been engaged in monitoring MTA's compliance with its commitments the "Joint Working Group" process established by the Consent Decree since 1996, a process that is expected to continue for several more years. I have prepared numerous expert reports and declarations, have been deposed on multiple occasions, made presentations to the Special Master appointed by the Court, have testified in Federal District Court, and prepared commentary on MTA Draft Environmental Impact Statements/Environmental Impact Reports.

I have assisted plaintiff counsel and the plaintiffs in preparing successful presentations to the Special Master. This produced first an advisory finding, then an enforceable order, for MTA to increase its level of service to the public to comply with the terms of the CD. I have also assisted in the plaintiff's successful defense of these orders before the District Court, a Ninth Circuit tribunal, and the entire Ninth Circuit.

- As a subcontractor to Cambridge Systematics, Inc., I assisted the State of Washington Joint Legislative Audit and Review Committee with a performance audit of the Washington State Department of Transportation Highways and Rail Programs. My primary responsibilities were for the determination of the impacts of State statutes on prevailing wages and compliance with environmental regulations.

- I served as an expert to the law firm of Richard I. Fine & Associates in *Raymond Veltman v. State of California.* This suit was brought to require a return of $50 million of Transportation Development Act sales tax funds that were transferred from MTA to the County of Los Angeles under a State statute. Plaintiffs were successful in gaining a ruling that the statute was unconstitutional in Superior Court (reversed on appeal). I assisted plaintiff counsel in formulating and structuring legal arguments and proofs, rendered a expert report and declaration, critiqued defendant's experts' reports, and testified as an expert in court.

- I assist the United Transportation Union (UTU), which represents MTA's bus and train operators and schedulers, in the labor contract negotiations and pension plan administration processes. My primary areas of support are employee benefits, including pension and Social Security, and costing of proposals, and, during a 32-day strike, representing the UTU in testimony before a joint State Senate/Assembly hearing. I also provide assistance in on-going pension plan administration matters.

  I served as an expert to UTU in two arbitration actions against the MTA, where UTU alleged that MTA had improperly converted certain bus lines to be staffed with lower wage bus operators in violation of the bargaining agreement. I prepared a declaration and testified re MTA and common industry definitions of terms in the agreement and prepared an analysis of MTA's (failures in) compliance of the agreement. The arbitrator found for the UTU. In a later arbitration, I assisted UTU in the determination of penalties against MTA for the first violation.

  I am currently assisting UTU and the Amalgamated Transportation Union (ATU) , which represents MTA mechanics, service attendants, and certain related functions, in analyzing and responding to MTA proposals to restructure transit service delivery in Los Angeles County and in responding to proposed changes in State legislation.

I also assisted ATU in attempting to gain passage of a State law requiring MTA to make contributions to the ATU Health and Welfare fund.

- I served as an expert, assisting the law firm of Neyhart, Anderson, Fretas, Flynn & Grosboll, in *Neil Silver et al v. Los Angeles County Metropolitan Transportation Administration.* The plaintiff alleged that MTA improperly removed certain MTA employees from coverage under the Social Security Act Old Age, Survivors and Disability Insurance (OASDI) program and improperly paid the OASDI contributions and related taxes on such payments for certain MTA employees, not including the plaintiffs. I assisted plaintiff counsel in formulating and structuring legal arguments and proofs and rendered a declaration.

- For the Texas Public Policy Foundation (TPPF), with Wendell Cox, I prepared a report, *Trolley Folly – A Feasibility Study of VIA's Light Rail Plan*[1], examining the feasibility and utility light rail/sales tax increase ballot referendum proposed by VIA Metropolitan Transit in San Antonio. Along with other experts on both sides of the issue, I also participated in one televised and one webcast debate and made presentations to various audiences. The light rail/sales tax proposal was defeated, 70% to 30%.

  I also assisted TPPF in its opposition to a referendum proposal by Dallas Area Rapid Transit to extend its debt term authority from the current five years to thirty years in order to speed construction of light rail lines and certain other transportation projects. My responsibilities included analysis of the cost per added trip ($37.70), review of sales tax growth projections, examination of passenger growth and fare increase projections, preparation and presentation of reports on these and related topics, and participation in a debate. Wendell Cox and I prepared *The DART Long Term Debt Issue: Unnecessary Costs and High Risks*, August 2000. The proposal was successful at the polls.

  Also with Wendell Cox, I prepared a report for TPPF on long-term surface transportation options for the State of Texas, including debt financing, *The Road Ahead: Innovations for Better Transportation in Texas.*

- For the Santa Clara County Valley Transportation Authority (San Jose, California), I assisted in the selection of legal counsel for financing and employee benefits/pensions. I also assisted Valley Transit in the preparation for labor negotiations and the costing of changes to the labor agreements with three unions.

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[1] This and other TPPF papers are available at the TPPF web site, http://www.tppf.org.

Thomas A. Rubin, Consultant (Continued)

I also assisted VTA in its defense against major construction claims related to the Tasman Light Rail line, performing contract audit and construction project oversight-related work.

- For Metro Transit (Metropolitan County Transit Operations, Minneapolis/Saint Paul), I prepared four reports: (1) Costing of light rail and "rubber tire" guideway options for the Hiawatha Transit Corridor, (2) Analysis of operator labor wage, benefits, and work rules, (3) Peer group analysis of Metro Transit operations, and (4) Metro Transit budget analysis.

- I served as an expert to the law firm of Richard I. Fine & Associates in *Rex Foreman v. City of Los Angeles*. The plaintiff alleged that the City improperly utilized Special Parking Revenue Fund monies for purposes that were not allowed by the City Ordinance that authorized the creation of the Fund. I assisted plaintiff counsel in formulating and structuring legal arguments and proofs, rendered an expert declaration, critiqued defendant's expert reports, and provided expert assistance in the plaintiff's deposition of defendant's expert. After the plaintiff's case was presented, the case was settled on terms highly satisfactory to the plaintiff.

- Along with Wendell Cox, I assisted Reclaim Our Allocated Dollars (ROAD) in an analysis and response to proposed surface transportation plans in Austin, Texas. I participated in a televised debate, made presentations to civic groups, and co-prepared three papers, *Options Ignored, Opportunities Lost: An Analysis of Affordable Transportation Options for Austin*, October 13, 2000; *Trolley Folly: A Critical Analysis of the Austin Light Rail Proposal*, September 27, 2000; and *Technical Appendix A: Exaggerating Benefits: A Critique fo the Hickling Lewis Brod Decision Economics, Inc. Analysis of Congestion Management Benefits of Light Rail*[2]. These reports suggested superior alternatives to the proposed light rail system (including busways/high-occupancy vehicle/high occupancy tool lanes and improved freeway and surface street systems) and carefully reviewed projections made by light rail proponents. The proposal to construct light rail was defeated at the polls.

- For the Reason Foundation, with funding from the Irvine Foundation, I wrote four papers (with co-author James E. Moore II of the University of Southern California): (1) "Why Rail Will Fail: An Analysis of the Los Angeles County Metropolitan Transportation Authority's Long Range Plan" (Policy Study No. 209, July 1996), (2) "Ten Transit Myths: Misperceptions About Rail Transit in Los Angeles and the Nation" (Policy Study No. 218, November 1996), (3) "Rubber Tire Transit: A Viable Alternative to Rail" (Policy Study No. 230, August 1997), (4) "Better Transportation Alternatives for Los Angeles" (Policy Study No. 232, September 1997). With Professor Moore, Dean Peter Gordon of the University of Southern California School of Planning and Urban Design, and Robert Poole, President of the Reason Foundation, I co-authored, "Improving Transportation in the San Fernando

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[2] Also available through the TPPF web site, http://www.tppf.org.

Valley," (Policy Study No. 249, January 1999)[3], authoring the chapter on transit and the introductory and conclusion chapters.

- I served as an expert to the law firm of Richard I. Fine & Associates in *Jerry L. Counts, an individual, Kurt Hathaway, an individual, and Edward C. Waldheim, an individual v. Pete Wilson, Governor of the State of California, Kathleen Connell, Controller of the State of California, and Craig Brown, Director of Finance of the State of California.* The plaintiff alleged that the State had improper utilized off-road vehicle registration funds and other funds that were dedicated, by law, for specific off-road vehicle and recreational purposes for the general fund. The trial court found for the plaintiff and the defendant appeal of this decision was not successful.

- For PTI Journal, James E. Moore II and I wrote "Rail Transit in Los Angeles: A Faustian Bargain?" (1997, Volume 11, Number 1).

- I served as an expert, assisting the firm of Bricklin & Gendler, LLP, in *Save Our Valley v. Sound Transit (Central Puget Sound Regional Transit Authority) and the United States Department of Transportation* (W.D. Wash., No. 200-0715R). The plaintiffs alleged that Sound Transit violated numerous environmental justice protections in proposing to construct a surface light rail line down Martin Luther King, Jr. Boulevard South that would destroy businesses and residences on both sides of the street, restrict automotive and pedestrian traffic, and expose local residents to a high risk of train-vs.-auto and train-vs.-pedestrian incidents, while constructing totally separated rail track, including major subway sections, in all other portions of the alignment. My work included review of the safety, security, and traffic flow of the proposed project, as well as the financial aspects.

- Working as an expert/expert witness for the Texas Legal Foundation, plaintiff counsel in *Rob Todd and Alan Vogel v. The City of Houston, Texas and Metropolitan Transportation Authority of Harris County, Texas* (1999 Number 48884 in District Court of Houston, Texas, 190th Judicial District), I testified in support of the claim that the defendants had improperly refused to hold an election prior to the City allowing MTA to construct a light rail line on City streets, following the presentation of a petition with a sufficient number of valid signatures. Plaintiffs were successful in District Court, but were reversed on appeal.

- I prepared an analysis of the Southern California Association of Governments' Regional Transportation Plan for Environmental Defense (*e*) (formerly Environmental Defense Fund). I also assisted *e* in the analysis of a proposed transportation plan for Marin and Sonoma

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[3] These papers are available though the Reason Foundation web site, http://www.reason.org.

Counties, California. The *e* report was highly critical of a proposed rail proposal. The sales tax to fund the proposal was defeated in both counties.

I also prepared an analysis of the fare levels of the Los Angeles MTA and presented it to the MTA Board on behalf of Environmental Defense, the Natural Resources Defense Council, the Coalition for Clean Air, the Asian Pacific American Legal Center of Southern California, and Communities for a Better Environment. Our proposal to reduce MTA fares was not accepted by the MTA Board, but MTA management's proposal to raise fares was not, either.

I also assisted *e* in an open space project in the lower income, largely minority areas of Los Angeles County, including the establishment of soccer fields and training facilities. As a result of the activities initiated by *e*, a prime location in the core central city, originally planned to be converted to a warehouse/distribution center, was funded by the State of California to be made into a vitally needed inner city park.

- I served as an expert to the law firm of Richard I. Fine & Associates in *Norman Amjadi and Los Angeles County Association of Environment Health Specialists v. Board of Supervisors of The Los Angeles County, Sally Reed, Chief Administrative Officer, and Robert Gates, Director of the Department of Health Services* (BC 110446). Plaintiffs alleged that the County improperly and illegally increased public health inspection and license fees without typing such fees to actual costs of performance. I prepared a report and testified re the accounting requirements under the law and the County's actual actions. The Court found for the plaintiffs in this matter.

- Working for the law firm of Hale Lane Peak Dennison Howard and Anderson in Las Vegas, I analyzed the transportation and financial aspects of the proposed extension of the MGM Grand-Bally's, Inc. monorail. This monorail was proposed to be financed with over $600 million of tax-exempt bonds to be issued by the State of Nevada, backed solely by the fare revenues to be generated by the project. With Jon Twichell and counsel, I prepared reports critiquing the ridership and revenue projections of the project proponents, disclosing the highly favorable financial arrangements for the project proponents, the high price and low carrying capacity of the selected technology, and describing the credit risks to the bondholders. The project was approved by the State to proceed, but only after the proponents had agreed to a bond guarantee – reportedly at one of the highest premiums in history – to protect the bondholders against the failure of the project to achieve projected ridership and revenue.

- I assisted the Clark Atlanta University Environmental Justice Resource Center with a review of transit and transportation alternatives in the Greater Atlanta area, including allocation of financial resources to capital and operating projects and compliance with Federal air quality requirements, while fulfilling environmental justice concerns. My work included review of

the capital and operating budgets and financial results of the Metropolitan Atlanta Rapid Transit Authority, statutory requirements for utilization of tax funds and maintenance of financial ratio's, and financial projections to form an opinion on the requirement for, and the timing of, a transit fare increase; presentations at several public hearings, interest group meetings, and community meetings; meetings with elected representatives; and preparation of reports and graphic handouts.

- I assisted Perkins Coie LLP as an expert/expert witness in *Citizens for Mobility; Stuart Weiss; Donald F. Padelford; Richard Nelson; Richard Fike; Thomas Coad; and Emery Bundy v. Rodney E. Slater, Secretary of Transportation, Nuria I. Fernandez, Administrator of the Federal Transit Administration; Helen M. Knoll, Regional Director, Federal Transit Administration, Region X; U.S. Department of Transportation; Federal Transit Administration; and Central Puget Sound Regional Transit Agency* (W.D. Wash., No. C00-1812Z). Plaintiffs alleged that Central Puget Sound Regional Transit Agency prepared and acted on an false and improper environmental impact statement in approving the Central Link light rail project.

- I assisted Cleveland, Haddon & Metz in *Robert Torres et al v. MTA*. Plaintiffs alleged that their employer, MTA, unfairly discriminated in employee benefits in favor of former employees of the Los Angeles County Transportation Commission and against the former employees of the Southern California Rapid Transit District after the 1993 merger that formed MTA. I assisted counsel in documenting differences in treatment of employees and their impacts.

- I assisted the Greater Kansas City Chamber of Commerce to review a light rail transit proposal to be funded by a sales tax increase. Based on the analysis by CofC staff, myself, and another consultant, the CofC Board voted to oppose the plan and tax. I later assisted Citizens for Responsible Spending, which was formed to oppose the plan, in defeating the proposal, 60%/40%.

- I assisted the Cities of Fremont and Newark, California, in reviewing the allocation of revenues, costs, and transit services to their cities over a multi-year period by the Alameda-Contra Costa Transit District in accordance with the annexation agreement.

- I assisted the American Federation of State, County and Municipal Employees, locals 3150 and 3634, in their contract negotiations with MTA. AFSCME represents first line transit operations and maintenance supervisors.

- I am assisting Cades Schutte LLP in *Sensible Traffic Alternatives and Resources, Ltd. v Federal Transit Administration and City & County of Honolulu Department of Transportation Services et al* in a challenge to the Environmental Impact Statements for the

"Primary Corridor Transportation" Bus Rapid Transit project "Initial Operating Segment" in Honolulu.

- Working with Citizens Organized for Smart Transit (COST) in the San Fernando Valley in Los Angeles County, I had a major role in a successful challenge to the State of California Environmental Impact Report for what is now known as the "Orange Line" Bus Rapid Transit project in *COST v MTA*. I am continuing to work with COST and its legal counsel in forcing a proper analysis of alternatives, specifically including "Rapid Bus" service (higher speed bus service on arterial streets).

- Working with the law firm of Rowley & Klauser, LLP, I prepared an expert report analyzing the safety and security of debt service payments to bond holders of the Central Puget Sound Regional Transit Authority (Sound Transit) in the event of Sound Transit's loss of motor vehicle excise tax receipts as a result of the passage of State of Washington initiative 776.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT EXPERIENCE

I served as Controller-Treasurer (Chief Financial Officer) of the Southern California Rapid Transit District from June 1989 until the merger that formed the Los Angeles County Metropolitan Transportation Authority (MTA) in April of 1993. After passing on the position of Chief Financial Officer of MTA, I continued as an MTA employee until June of 1994. SCRTD, the largest transit operator in the State of California and the third largest in the United States, was a 9,000-employee public transit system with a $700 million per year operating budget and a capital budget of over $300 million per year. As a Board-appointed and Board-accountable officer of the District, my duties included responsibility for almost $200 million a year in expenditures and the following departments and functions:

- **Accounting and Fiscal** – All financial and accounting activities of the District, including general accounting, payroll, accounts payable and receivable, fixed assets, payroll, cashier, farebox cash counting, pass and ticket sales accounting, and construction project and grant accounting. Under my direction, the District was awarded the Certificate of Achievement for Excellence in Financial Reporting from the GFOA for its Comprehensive Annual Financial Report in its first year of application. I initiated and directed a program to replace tickets with tokens, which will result in over $5 million per year in annual savings through reduction of counterfeiting and more efficient fare processing. I was responsible for all financial reports and grantor agency relations for over $1.8 billion of grant-funded projects, including the largest single Federal grant program in the nation at the time, the Los Angeles "Red Line" subway.

- **Human Resources** – Employment, compensation, employee benefits, training, special projects (employee wellness, child care, employee magazine), employee activities, and retirement income program (pension plans, Section 457 deferred compensation plan, 401(k) plan). The District human resources program was nationally respected, including establishing one of the first, and still the most comprehensive, substance abuse programs in the industry.

- **Management Information Systems** – Design, implementation, management, and operations of one of the most sophisticated comprehensive transit operator management information systems in the world. SCRTD software has frequently been transferred to other transit operators.

- **Risk Management** – Placement of the District's insurance coverages, management of our public liability and workers' compensation contractors (each approximately $30 million per year self-insured, third party administered), and safety. The District set new all-time safety records in each of my last three years and reduced risk management costs by over $10 million per year, due in large part to a nationally recognized safety and claims management activities. I spent a great deal of time working with my two rail safety engineers attempting to reduce the collision/fatality rates on the Long Beach Blue Line, which, unfortunately, has

Southern California Rapid Transit District Experience (concluded)

proven to be the most dangerous light rail line in the United States by a wide margin. I was the first to suggest the use of "four-quadrant" gates, which, unlike the more common "two-quadrant" gates, block both sides of the street, making it more difficult to drive around the lowered crossing gate arms and into the paths of on-coming trains.

- **Treasury** – Management District short-and long-term debt, investment of District cash assets (up to $200 million), management of the assets held by the District's four pension plans (over $500 million), and management of other related funds ($300 million). The District commonly turned over $125-150 million in revenue anticipation notes per year. I also placed approximately $500 million of long-term debt. I structured a Japanese cross boarder leases that are provided over $1 million in direct bottom line cash. The District enjoyed extremely favorable interest rates on its outstanding debt, the investment of District funds consistently achieved returns well in excess of industry norms, and the pension plans were funded in excess of 105%.

- **Management and Budget** – Preparation of the District's short- and long-range financial plans and budgets, relations with grantor agencies from grant application to grant close-out, and preparation of internal performance measurement reports and evaluations.

I represented the public transit industry, presenting testimony supporting the dollar coin, before the U.S. House of Representatives Committee on Banking, Finance and Urban Affairs Subcommittee on Consumer Affairs and Coinage.

I have also served on, or chaired, several District-wide committees, including the New Services Review Board, the Budget Review Committee, the four District pension plan administrative committees, the Pension Investments Committee (Chair), the Personnel Review Committee, and the Southern California Rapid Transit Finance Corporation (Chair). I served as General Manager pro tem on several occasions in the absence of the General Manager.

ALAMEDA-CONTRA COSTA TRANSIT DISTRICT EXPERIENCE

I served as Assistant General Manager-Finance of the Alameda-Contra Costa Transit District in Oakland, California, from July 1995 to June 1996. In this position, I directed a staff of over 100 professional and clerical staff members responsible for:

- **Accounting** – All financial and accounting activities of the District, including general accounting, payroll, accounts payable and receivable, fixed assets, payroll, and construction project and grant accounting. Under my direction, the District was awarded the Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association (GFOA) for its Comprehensive Annual Financial Report, making it one of fewer than 20 transit operators in the nation to receive this prestigious award.
- **Benefits** – Medical, life insurance, long-term disability, workers' compensation, and other benefits for almost 2,000 employees and over 2,000 retirees
- **Budget** – Preparation of operational and capital budgets for $150 million+ a year agency and financial elements of Short-Range Financial Plan plus monitoring of performance and performance measures. The District was one of a handful of transit operators to receive the GFOA Award for Distinguished Budget Presentation.
- **Information Systems** – Operation and expansion of integrated business mini-computer based information systems, expansion of personal computer LAN/WAN network, and telephone system operations and expansion
- **Procurement and Stores** – Procurement of over $50 million a year in goods, services, and capital assets; operation of central storeroom and four division storerooms; and print shop operations
- **Retirement** – Management of $135 million+ pension plan and Section 457 Deferred Compensation Plan
- **Risk Management** – Placement of Property Damage/Public Liability, Property, and other coverages; management of claims inventory averaging over 1,000 per year
- **Treasury** – Management of over $50 million in District cash plus oversight of pension fund investments, placement of District debt, operation and repair of over 700 fareboxes and four division cash collection systems, oversight of cash counting contractor

In a time of fiscal distress, I developed a plan to generate over $2 million of new revenues through cross-boarder leases, COPs advance refinancing, COPs reserve fund investment return improvement, cash management improvements, and RANs issuance/legal arbitrage, and implemented the RANs while at AC Transit. I did financial analysis and inter-governmental liaison for a proposed parcel tax and a renewal of the Alameda County transportation sales tax. Under my direction, we significantly reduced medical insurance, public liability/property damage, and property insurance premiums and implemented a Section 125 child care program.

I also negotiated settlement of $7+ million pension plan funding dispute with bargaining units and commenced the process of wholesale change of outdated pension plan provisions. I served as Acting General Manager on several occasions in the absence of the General Manager.

EXPERIENCE WITH CALIFORNIA STATE GOVERNMENT

- California Department of Transportation – Preparation of manual on procurement and management of contract transit services (I took SCRTD position shortly after commencement of this project)

- California Water Resources Control Board, Division of Water Quality (DWQ)

  - Operational audit of DWQ's billion-dollar-a-year clean water grant program
  - Information requirements study and management information systems design for a comprehensive management information system for the Board, including the preparation and presentation of a feasibility study report. I also did an extensive study of potential systems to meet the Board's requirements, resulting in the selection and modification of a system currently being used by another State agency.
  - Design of an audit program and organization of an audit and project oversight department for DWQ

EXPERIENCE WITH STATE DEPARTMENTS OF TRANSPORTATION

- Commonwealth of Massachusetts Executive Office of Transportation and Construction – Design and implementation of a state-wide transit performance measurement system

- Ohio Department of Transportation Division of Public Transportation:

  - Assisted Ohio transit operators with applying the principles of financial capacity analysis to their long-term planning
  - Strategic planning study and organizational review

- Commonwealth of Pennsylvania Legislative Budget and Finance Committee – Operational audits of the Pennsylvania Department of Transportation:

  - Contracting for and control over service contracts
  - Internal management and accounting controls

- State of Washington Department of Transportation – Arrangement of safe-harbor lease, which involved obtaining passage of a new Federal law to allow W-DOT to realize over $15 million from the sale of depreciation rights on ferries

- State of Washington Joint Legislative Audit Committee – As a subcontractor to Cambridge Systematics, Inc., I assisted in the performance audit of the State of Washington Department of Transportation. My responsibilities were the costs of environmental compliance and compliance with Federal and State construction labor rate/employee benefit requirements.

EXPERIENCE WITH CALIFORNIA TRANSPORTATION AGENCIES

I have served the following California transportation agencies with audit and consulting projects, as described in more detail in other sections of this qualifications statement:

- Alameda-Contra Costa Transit District
- Alameda County Transportation Authority
- California Department of Transportation
- Central Contra Costa Transit District
- City of Fremont
- Fresno County Transportation Authority
- Golden Gate Bridge, Highway and Transportation District
- Laguna Beach Municipal Transit Lines
- Laidlaw Transit, Inc.
- Lodi Dial-a-Ride
- Long Beach Public Transit Corporation
- Los Angeles County Transportation Commission
- Metropolitan Transportation Commission
- Monterey Peninsula Transit
- Monterey-Salinas Transit
- City of Newark
- Orange County Consolidated Transportation Service Agency
- Orange County Transit District
- Orange County Transportation Commission
- Ripon Transit System
- Riverside Transit Agency
- Sacramento Regional Transit District
- Salinas Transit System
- San Diego Transit Corporation
- San Francisco Bay Area Rapid Transit District
- San Diego Metropolitan Transit Development Board
- San Joaquin County Council of Governments
- San Francisco Municipal Railway
- San Mateo County Transit District
- Santa Cruz Metropolitan Transit District
- Santa Clara County Transit District
- Santa Clara County Transportation Agency
- Santa Clara Valley Transportation Agency
- Southern California Association of Governments
- Southern California Rapid Transit District
- South Coast Area Transit
- Southern California Association of Governments
- Stockton Metropolitan Transit District

Experience with California Transportation Agencies (Concluded)

- Town of Tiburon
- TRACY TRANS
- Walnut Creek Transit System

FINANCIAL PLANNING AND ANALYSIS

- Birmingham-Jefferson County Transit Authority – Tax subsidy allocation project

- Los Angeles County Transportation Commission – Preparation of financial forecasts for the Official Statement for $707 million bond issue, one of the largest in the history of the U.S. transit industry

- Metro-Dade Transit Agency (Miami) – Long-range operations/capital/financial models and forecasts used to support a sales tax referendum to fund transit

- Metropolitan Transportation Commission – Long-term capital/operating/finance model and study

- National League of Cities – Developed a manual on applying financial capacity analysis to city-owned and operated transit systems

- Orange County Transit District – Long-term capital/operating financial analysis and modeling

- Orange County Transportation Commission – Long-term capital/operating financial analysis and modeling

- San Francisco Bay Area Rapid Transit District – Innovative financing study that studied methods of financing BART extensions through non-traditional means, primarily real estate joint ventures

- Santa Clara County Transit District – Long-term capital/operating financial analysis and modeling, sales tax forecast for the placement of $58,700,000 of equipment trust certificates to help finance light rail project

- Santa Clara County Transportation Agency – Study of surface transportation financing for the Transportation 2000 project

- Urban Mass Transportation Administration (now Federal Transit Administration):

  - (Through the National Association of Regional Governments) – Study of the state-of-the-art in metropolitan planning organization (MPO)/transit operator financial planning practices and procedures in order to determine what changes would be necessary to comply with the UMTA circular on financial capacity assessment (FCA)
  - (Through the Rice Center) Developed specific procedures for implementation of the FCA circular; documenting policies, procedures, and specific tests for both local

Financial Planning and Analysis (Concluded)

transit operators and MPOs to follow; development of procedures for UMTA in reviewing financial plans; and four national training seminars for transit professionals

In addition to the work described above, several other projects, particularly those listed under expert/expert witness, include substantial financial planning and analysis work.

FINANCIAL AUDIT

I prepared DH&S' first general "single audit" work program and also more specific procedures for auditing transit operators. I prepared the firm's first A-128 single audit work program and training materials for internal DH&S use and spoke widely on single audit subjects. I assisted in the planning, execution, and review of many of DH&S' single audits, including those of the following transit operators and planning and funding agencies:

- Alameda-Contra Costa Transit District (Oakland, California)
- Alameda County Transportation Authority (Oakland, California)*
- Atlantic County Transportation Authority (New Jersey)
- Central Contra Costa Transit District (Walnut Creek, California)
- Central Ohio Transit Authority (Columbus)
- City Utilities of Springfield (Missouri)
- Dallas Area Rapid Transit (Texas)
- City of Davenport Transit System (Iowa)
- Delaware River Port Authority/Port Authority Transit Corporation (Camden, New Jersey)
- Economic Opportunity Board of Clark County (Las Vegas, Nevada)
- Fresno County Transportation Authority (California)*
- Golden Gate Bridge, Highway and Transportation District (San Francisco, California)
- Grand Rapids Area Transit Authority (Michigan)
- Greater Bridgeport Transit Authority (Connecticut)
- Greater Cleveland Regional Transit Authority
- Metropolitan Dade County Transit Agency (Miami, Florida)
- Metropolitan Transit Commission (Minneapolis/Saint Paul)
- Metropolitan Transportation Commission (San Francisco Bay Area)
- Mobile Transit Authority (Alabama)
- Monterey Peninsula Transit (California)
- Monterey-Salinas Transit (California)
- New Jersey Transit Corporation
- Niagara Frontier Transportation Authority (Buffalo, New York)
- Oahu Metropolitan Planning Organization (Honolulu, Hawaii)
- Orange County Transit District (California)
- Palm Beach County Transportation Authority (Florida) (dba COTRAN)
- Pioneer Valley Transit Authority (Springfield, Massachusetts)
- Regional Transit Authority (Canton, Ohio)
- Regional Transit Board (Minneapolis/Saint Paul)
- Riverside Transit Agency (California)
- Sacramento Regional Transit District (California)
- Salinas Transit System (California)

* Served as Engagement Audit Partner

Financial Audit (Concluded)

- San Diego Transit Corporation (California)
- San Francisco Bay Area Rapid Transit District (California)*
- Santa Clara County Transit District (San Jose, California)*
- Southeastern Pennsylvania Transportation Authority (Philadelphia)
- Southern California Association of Governments (Greater Los Angeles area)
- Southern California Rapid Transit District (Los Angeles)
- South Coast Area Transit (Oxnard, California)
- Suburban Mobility Authority for Regional Transportation (Detroit, Michigan)
- The "T" (Fort Worth, Texas)
- Thomas Jefferson Planning District Commission (Charlottesville, Virginia)
- Walnut Creek Transit System (California)
- Westport Transit System (Norwalk, Connecticut)
- Woods Hole, Martha's Vineyard and Nantucket Steamship Authority (Massachusetts)

* Served as Engagement Audit Partner

MANAGEMENT INFORMATION SYSTEMS

- Alameda - Contra Costa Transit District – During an over decade-long DH&S relationship with the Alameda-Contra Costa Transit District in Oakland, California, I served as project manager during the crucial early design phase and implementation of the initial software applications and later as project partner. I participated in the analysis of operations and existing information systems and was the principal author of the application software element of AC Transit's Long-Range Management Information Systems/Data Processing Plan. I also had primary responsibility for analysis, selection, and implementation of application software for the general ledger and accounts payable systems and had overall responsibility for the design and implementation of the payroll/labor distribution system. In later phases of the project, I was responsible for the design of several financial and operational software applications, including farebox revenue control, long-range financial/ operational planning, inventory control, and maintenance history and scheduling. I was later the Project Partner for the design and implementation of a timekeeping and absenteeism system and for the analysis of AC Transit's requirements for a new general ledger system.

- Bi-State Development Agency (Saint Louis) – Served as a member of the technical review team for this major MIS/DP project, which included the design and installation of several major application systems and the acquisition of computer hardware

- C-Trans (Vancouver, Washington) – Assisted with information requirements study

- Canton Regional Transit Authority (Ohio) – Project Partner for the selection of a turnkey MIS/DP contractor

- Connecticut Department of Transportation/Connecticut Transit – Project Partner for project to design and implement a MIS/DP system for Connecticut Transit

- Golden Gate Bridge, Highway and Transportation District – I assisted the District in defining and implementing their MIS/DP requirements over a period of several years. My first work for Golden Gate involved Section 15 pre-implementation planning and grant funding procurement. DH&S was subsequently engaged by Golden Gate to provide substantially the same services that were provided to AC Transit; my responsibilities paralleled those described above.

- Greater Bridgeport Transit District (Connecticut) – Project Partner for the selection of a turnkey MIS/DP contractor

- Intercity Transit (Olympia, Washington) – Assisted in MIS/DP needs definition and procurement of a hardware/software/ implementation assistance contractor

Management Information Systems (concluded)

- Jacksonville Transportation Authority (Florida) – Technical advisor on MIS requirements analysis/planning study

- Mass Transportation Administration of Maryland (Baltimore) – Served on the technical review committee for a major project to design and implement a comprehensive management information system comprehending virtually every area of MTA operations

- New Jersey Transit Corporation – Assisted in MIS needs analysis, prepared a major grant application for MIS, reviewed candidate software systems, and assisted in the implementation of general ledger and related software

- Orange County Transit District (California) – Project Partner for long-range MIS/DP/Office Automation Plan

- Pace (suburban Chicago, Illinois) – Project Partner for quality control work for the transfer of AC Transit's maintenance and materials management information system

- Pioneer Valley Transit Authority (Springfield, Massachusetts) – MIS/DP needs analysis, feasibility study, procurement of software/hardware/installation contractor

- Regional Transportation District (Denver, Colorado) – Technical review team for project to design RTD's main financial and statistical systems

- San Mateo County Transit District (California) – Technical advisor on MIS requirements analysis and design project

- Santa Cruz Metropolitan Transit District (California) – Project Partner for post-implementation review of turnkey MIS implementation

CAPITAL PROJECT MANAGEMENT AND AUDIT

- British Columbia Transit – Construction Management Assistance for Vancouver SkyTrain project

- Capital Area Transit Authority (Lansing, Michigan) – Contract audit of single bid bus procurement

- Greater Cleveland Regional Transit Authority – Contract audit of single bid bus procurement

- Los Angeles County Transportation Commission – Construction Management Oversight and contract audit work for the $1 billion+ Long Beach-Los Angeles "Blue Line" light rail project, including all aspects of planning, management, design and implementation of practices and procedures, finance, technical design, and project management and control (joint venture with Kellogg Corporation)

- Los Angeles Unified School District – I am assisting the School Construction Bond Citizens' Oversight Committee with its oversight of the expenditure of almost $10 billion from three voter-approved bond issues, and almost $5 billion from other sources, for construction of new schools and modernization of existing schools. This program of projects is one of the largest construction project now underway in the United States.

- Pace (Suburban Bus Division of RTA – Chicago, Illinois) – Contract audit of single bid bus procurement

- Sacramento Regional Transit District – Compliance audit of light rail vehicle procurement

- San Diego Metropolitan Transit Development Board – Contract audit of single bid light rail vehicle procurement in Germany

- Santa Clara County Transit District – Contract audit of single bid propulsion power supply procurement

- Santa Clara County Valley Transportation Authority (San Jose, California) – I assisted VTA in its defense against major construction claims related to the Tasman Light Rail line, performing contract audit and construction project oversight-related work.

- Southeastern Michigan Transportation Authority (Detroit) – Contract audit of sole source bus rebuilding contract

- Tri-County Metropolitan Transportation District of Oregon (Portland) – Construction Management Oversight/contract audit for Banfield Light Rail Project

Capital Project Management and Audit (Concluded)

- Urban Mass Transportation Administration (now Federal Transit Administration) – Contract and compliance audits of the troubled Central Automated Transit System (CATS), the downtown people mover for the Detroit central business district

PERFORMANCE AUDIT AND PERFORMANCE MEASUREMENT SYSTEMS

- City and County of Honolulu – Performance audit of MTL, Inc. (TheBus), the contract transit operator for the City and County of Honolulu

- Los Angeles County Transportation Commission – Performance audit of LACTC

- Metro-Dade Transportation Authority (now "Miami-Dade") (Miami, Florida) – Technical advisor to the Blue Ribbon Task Force that conducted a performance audit of MDTA

- Metropolitan Transportation Commission – Performance audit of San Francisco Municipal Railway

- Orange County Transportation Commission – Performance audits of:

  - Laguna Beach Municipal Transit Lines
  - Orange County Consolidated Transportation Service Agency
  - Orange County Transit District
  - Orange County Transportation Commission (2)

- San Joaquin County Council of Governments – Performance audits of:

  - Lodi Dial-a-Ride
  - Ripon Transit System
  - San Joaquin County Council of Governments
  - Stockton Metropolitan Transit District
  - TRACY TRANS

- Southern California Association of Governments – Performance audit of SCAG

- Utah Transit Authority – Strategic planning study

- State of Washington Joint Legislative Audit Committee – As a subcontractor to Cambridge Systematics, Inc., I assisted in the performance audit of the State of Washington Department of Transportation. My responsibilities were the costs of environmental compliance and compliance with Federal and State construction labor rate/employee benefit requirements.

MERGER AND REORGANIZATION

- Deloitte Haskins & Sells (now Deloitte & Touche LLP) – Proposed, assisted in the negotiation of the terms of merger, and assisted in the implementation of the merger between DH&S and a transit software and consulting company, including working with the employees of the merged organization during the transition period

- Dallas Area Rapid Transit – Assisted in the transfer of the former City of Dallas Transit System to become part of DART and assisted in designing and implementing internal and external reporting systems, financial planning and grant management procedures, and management information systems

- New Orleans Public Service, Inc. (formerly the transit operator for New Orleans) – Assisted in the sale of transit assets and the transfer of pension responsibilities to the Regional Transit Authority

- New Jersey Transit Corporation – Assisted in the changeover in the financial systems resulting from the takeover of Transport of New Jersey (a private company that provided most of the bus transit services in New Jersey), assisted in both defining internal and external reporting requirements and the design of a management information system, and, when NJTC became responsible for New Jersey's commuter rail operations, assisted in the development of a management strategy for management and provision of these services and in the design and selection of management information systems

- Pierce County Public Transportation Benefit Area Authority Corporation – Assisted in the establishment of financial information systems when Pierce Transit was formed by the transfer of personnel and assets from the City of Tacoma Transit System

CONTRACTING AND PRIVATIZATION

- Amalgamated Transit Union/United Transportation Union – I assisted ATU and UTU with analysis and response to Los Angeles MTA and related agency proposals to break the MTA into various smaller transit agencies

- California Department of Transportation – Preparation of manual on procurement and management of contract transit services (I took SCRTD position shortly after commencement of this project)

- Gwinnett County (Georgia) – Study of financial considerations in providing transit services by contractors

- Metro-Dade Transit Authority (Miami) – Identification of potential functions to be considered for contracting to the private sector

- Metropolitan Transportation Commission (San Francisco Bay Area) – Development of data base of private sector organizations interested in providing transit services to public sector agencies and subsequent update of data base

- National Association of Regional Councils – Development of handbook for transit operators on contracting out for transit services

- Regional Transportation District (Denver) – Study of privatization of management services

- South Carolina Electric and Gas Company (transit operator for Charleston, South Carolina) – Arrangement for Federal Operating Assistance Grant funding to be received through the City of Charleston

- Southwest Ohio Regional Transit Authority (Cincinnati) – Study of fully-allocated and avoidable costs of in-house transit services for a competitively bid public/private transit service procurement

- Town of Tiburon (California) – Structured an innovative financial plan to maintain ferry transit service operated by a private firm by qualifying service for Federal Section 9 formula grant funding

EXPERT/EXPERT WITNESS

- Labor/Community Strategy Center, Bus Riders Union, Southern Christian Leadership Conference of Greater Los Angeles County, Korean Immigrant Workers Advocates, Maria Guardado, Richardo Zelada, Noemi Zelada, and Pearl Daniels, vs. Los Angeles County Metropolitan Transportation Authority and Franklin E. White, Etc. – This Federal Title VI (discrimination in the utilization of Federal grant funding) suit was brought against MTA by a coalition of grass-root organizations representing transit-dependent people of color and individuals to oppose an increase in transit fares and MTA's policy of allocating the majority of transit subsidy funding to rail. A temporary restraining order was granted prohibiting MTA from implementing its planned fare increase, followed later by a temporary injunction. Later, the two sides agreed to a limited fare increase to be in place until trial. The suit was settled two years after original filing by a Consent Decree – which has an estimated value of $1.5-3.0 billion for the plaintiff class – that provided for:

  - MTA Board adoption of a policy of its, "highest priority, improvement of the quality of bus service in Los Angeles."
  - Instead of cancellation of monthly passes for most passengers, continuation of the $42 monthly pass for two years from the date of the Consent Decree (for a total of over four years from the original MTA implementation date for the new fare structure), a semi-monthly pass at a reduced price of $21, and a new weekly pass at $11.
  - Further fare increases to be no more than the inflation, with consideration of the impact on low income transit dependent residents, and subject to review by the Court prior to implementation.
  - Commitment to reduce peak overcrowding from the previous MTA standard of 145% of seated load (which was rarely met on the higher utilized routes) to actual achievement of a 120% load factor by 2002, in specified interim steps.
  - Immediate addition of 51 buses, plus another 51 buses within eight months, for overcrowding relief, plus 50 more buses for new bus lines to meet unmet transit demands as a pilot program.
  - Creation of a Joint Working Group (JWG) to plan, implement, and monitor the Consent Decree.

  Over a period of two years, I was a major participant in all aspects of the lawsuit, from legal, political, and public relations strategies; fact finding and discovery; depositions of various parties; expert reports; rebuttal to MTA experts' reports; and written and oral presentations to the Court-appointed Mediator. Following the Court approval of the Consent Decree, I have been assisting the plaintiffs and plaintiffs' attorneys in the work of the JWG, monitoring of MTA performance, and opposition to MTA actions that plaintiffs believed were in violation of the Consent Decree, since the CD was entered in 1996.

Expert/Expert Witness (continued)

- Raymond Veltman v. State of California, Pete Wilson, as Governor of the State of California, County of Los Angeles, Los Angeles County Metropolitan Transportation Authority, and Does 1 Through 50, Inclusive – I served as an expert to the law firm of Richard I. Fine & Associates. This suit was brought to require a return of $50 million of Transportation Development Act sales tax funds that were transferred from MTA to the County of Los Angeles under a State statute. Plaintiffs were successful in gaining a ruling that the statute was unconstitutional in Superior Court (reversed on appeal). I assisted plaintiff counsel in formulating and structuring legal arguments and proofs, rendered a expert report and declaration, critiqued defendant's experts' reports, and testified as an expert in court.

- I served as an expert to the United Transportation Union in an arbitration action against the Los Angeles County Metropolitan Transportation Authority, claiming that MTA had improperly converted certain bus lines to be staffed with lower wage bus operators in violation of the bargaining agreement. I prepared a declaration and testified re MTA and common industry definitions of terms in the agreement and prepared an analysis of MTA's (failures in) compliance of the agreement. The arbitrator found for the UTU. In a subsequent action, I assisted UTU in an arbitration to determine the damages to be paid by MTA for its violations.

- Rex Foreman v. City of Los Angeles – I served as an expert to the law firm of Richard I. Fine & Associates. The plaintiff alleged that the City improperly utilized Special Parking Revenue Fund monies for purposes that were not allowed by the City Ordinance that authorized the creation of the Fund. I assisted plaintiff counsel in formulating and structuring legal arguments and proofs, rendered a expert declaration, critiqued defendant's expert reports, and provided expert assistance in the plaintiff's deposition of defendant's expert. After the plaintiff's case was presented, the case was settled on terms highly satisfactory to the plaintiff.

- Neil Silver, James Williams, Robert Bennett, Robert Caudill and Johnny Howard v. Los Angeles County Metropolitan Transportation Authority – I assisted the law firm of Neyhart, Anderson, Fretas, Flynn & Grosboll. The plaintiff alleged that MTA improperly removed certain MTA employees from coverage under the Social Security Act Old Age, Survivors and Disability Insurance (OASDI) program and improperly paid the OASDI contributions and related taxes on such payments for certain MTA employees, not including the plaintiffs. I assisted plaintiff counsel in formulating and structuring legal arguments and proofs and rendered a declaration.

- Jerry L. Counts, an individual, Kurt Hathaway, an individual, and Edward C. Waldheim, and individual v. Pete Wilson, Governor of the State of California, Kathleen Connell, Controller of the State of California, and Craig Brown, Director of Finance of the State of California.

Expert/Expert Witness (continued)

– I served as an expert to the law firm of Richard I. Fine & Associates. The plaintiff alleged that the State had improper utilized off-road vehicle registration funds and other funds that were dedicated, by law, for specific off-road vehicle and recreational purposes for the general fund. The trial court found for the plaintiff.

- Working for the law firm of Hale Lane Peak Dennison Howard and Anderson in Las Vegas, I analyzed the transportation and financial aspects of the proposed extension of the MGM Grand-Bally's, Inc. monorail. This monorail was proposed to be financed with over $600 million of tax-exempt bonds to be issued by the State of Nevada, backed solely by the fare revenues to be generated by the project. With Jon Twichell and counsel, I prepared reports critiquing the ridership and revenue projections of the project proponents, disclosing the highly favorable financial arrangements for the project proponents, the high price and low carrying capacity of the selected technology, and describing the credit risks to the bondholders. The project was approved by the State to proceed, but only after the proponents had agreed to a bond guarantee – reportedly at one of the highest premiums in history – to protect the bondholders against the failure of the project to achieve projected ridership and revenue.

- Citizens for Mobility; Stuart Weiss; Donald F. Padelford; Richard Nelson; Richard Fike; Thomas Coad; and Emery Bundy v. Rodney E. Slater, Secretary of Transportation, Nuria I. Fernandez, Administrator of the Federal Transit Administration; Helen M. Knoll, Regional Director, Federal Transit Administration, Region X; U.S. Department of Transportation; Federal Transit Administration; and Central Puget Sound Regional Transit Agency (W.D. Wash., No. C00-1812Z) – I assisted Perkins Coie LLP as an expert/expert witness in this matter. Plaintiffs alleged that Central Puget Sound Regional Transit Agency prepared and acted on an false and improper environmental impact statement in approving the Central Link light rail project.

- Norman Amjadi and Los Angeles County Association of Environment Health Specialists v. Board of Supervisors of The Los Angeles County, Sally Reed, Chief Administrative Officer, and Robert Gates, Director of the Department of Health Services (BC 110446) – I served as an expert to the law firm of Richard I. Fine & Associates in this matter. Plaintiffs allege that the County improperly and illegally increased public health inspection and licence fees without typing such fees to actual costs of performance. I prepared a report and testified re the accounting requirements under the law and the County's actual actions.

- Save Our Valley v. Sound Transit (Central Puget Sound Regional Transit Authority) and the United States Department of Transportation (W.D. Wash., No. 200-0715R) – I served as an expert, assisting the firm of Bricklin & Gendler, LLP. The plaintiffs alleged that Sound Transit has violated numerous of their environmental justice protections in proposing to construct a surface light rail line down Martin Luther King, Jr. Boulevard South that would

destroy businesses and residences on both sides of the street, restrict automotive and pedestrian traffic, and expose local residents to a high risk of train-vs.-auto and train-vs.-pedestrian incidents, while constructing totally separated rail track, including major subway sections, in all other portions of the alignment. My work included review of the safety, security, and traffic flow of the proposed project, as well as the financial aspects.

- Rob Todd and Alan Vogel v. The City of Houston, Texas and Metropolitan Transportation Authority of Harris County, Texas (1999 Number 48884 in District Court of Houston, Texas, 190th Judicial District) – Working as an expert/expert witness for The Texas Legal Foundation, I testified in support of plaintiff's claim that the defendants had improperly refused to hold an election prior to the City allowing MTA to construct a light rail line on City streets, following the presentation of a petition with a sufficient number of valid signatures. Plaintiffs were successful in District Court, but were reversed on appeal.

- Robert Torres et al v. MTA – I assisted the firm of Cleveland, Haddon & Metz in this action alleging that MTA unfairly discriminated in employee benefits in favor of former employees of the Los Angeles County Transportation Commission and against the former employees of the Southern California Rapid Transit District after the 1993 merger that formed MTA. After numerous appeals, the former SCRTD employees were certified as a class and the matter proceeded to trial. I assisted counsel in documenting differences in treatment of employees and their impacts.

- I am assisting Cades Schutte LLP in *Sensible Traffic Alternatives and Resources, Ltd. v Federal Transit Administration and City & County of Honolulu Department of Transportation Services et al* in a challenge to the Environmental Impact Statements for the "Primary Corridor Transportation" Bus Rapid Transit project "Initial Operating Segment" in Honolulu.

- Working with Citizens Organized for Smart Transit (COST) in the San Fernando Valley in Los Angeles County, I had a major role in a successful challenge to the State of California Environmental Impact Report for what is now known as the "Orange Line" Bus Rapid Transit project in *COST v MTA*.

- Working with the law firm of Rowley & Klauser, LLP, I prepared an expert report analyzing the safety and security of debt service payments to bond holders of the Central Puget Sound Regional Transit Authority (Sound Transit) in the event of Sound Transit's loss of motor vehicle excise tax receipts as a result of the passage of State of Washington initiative 776.

MISCELLANEOUS TRANSPORTATION

- American Federation of State, County and Municipal Employees, locals 3150 and 3634 – I assisted AFSCME in contract negotiations with MTA. AFSCME represents first line transit operations and maintenance supervisors.

- American Public Transit Association Section 15 Committee – Prepared proposed revision of Section 15 accounting and reporting regulations and forms for presentation to UMTA

- Capital Metropolitan Transportation Authority (Austin, Texas) – Organized and facilitated a Board/Management retreat

- Clark Atlanta University Environmental Justice Resource Center – Assistance in review and response to Greater Atlanta region surface transportation plans, including funding and environmental justice

- City of Fremont/City of Newark – I assisted the cities in reviewing the allocation of revenues, costs, and transit services to them over a period of several years in accordance with the annexation agreement

- Dallas Area Rapid Transit – Cash handling review

- Environmental Defense (*e*) (formerly Environmental Defense Fund) – I prepared an analysis of the Southern California Association of Governments' Regional Transportation Plan. I also assisted *e* in the analysis of a proposed transportation plan for Marin and Sonoma Counties, California. The *e* report was highly critical of a proposed rail proposal. The sales tax to fund the proposal was defeated in both counties.

  I also prepared an analysis of the fare levels of the Los Angeles MTA and presented it to the MTA Board on behalf of Environmental Defense, the Natural Resources Defense Council, the Coalition for Clean Air, the Asian Pacific American Legal Center of Southern California, and Communities for a Better Environment.

- Greater Kansas City Chamber of Commerce/Citizens for Responsible Spending – I assisted the Greater Kansas City Chamber of Commerce to review a light rail transit proposal to be funded by a sales tax increase. Based on the analysis by CofC staff, myself, and another consultant, the CofC Board voted to oppose the plan and tax. I later assisted Citizens for Responsible Spending, which was formed to oppose the plan, in defeating the proposal, 60%/40%.

- Laidlaw Transit, Inc. – Design of a passenger sampling system for Section 9/15 reporting for service operated under contract to the City of Los Angeles Department of Transportation

Thomas A. Rubin, Consultant (Continued)

- Long Beach Public Transit Corporation – Preparation of a purchasing policies and procedures manual and review of their purchasing policies and procedures for compliance with legal requirements and proper contracting standards

- Los Angeles County Transportation Commission – Preparation of a comprehensive policy manual for all aspects of the design, construction management, procurement of goods and services, and related areas for the $1.0+ billion Long Beach-Los Angeles Light Rail Project

- Metro Transit (Metropolitan County Transit Operations, Minneapolis/Saint Paul), I prepared four reports: (1) Costing of light rail and "rubber tire" guideway options for the Hiawatha Transit Corridor, (2) Analysis of operator labor wage, benefits, and work rules, (3) Peer group analysis of Metro Transit operations, and (4) Metro Transit budget analysis.

- Metropolitan Transit Authority of Harris County (Houston) – Board of Directors reporting system and conduct of two seminars on "Principles of Transit Accounting"

- Reclaim Our Allocated Dollars (Austin, Texas) – Along with Wendell Cox, I assisted in an analysis and response to proposed surface transportation plans in Austin, Texas. I participated in a televised debate, made presentations to civic groups, and co-prepared three papers, *Options Ignored, Opportunities Lost: An Analysis of Affordable Transportation Options for Austin*, October 13, 2000; *Trolley Folly: A Critical Analysis of the Austin Light Rail Proposal*, September 27, 2000; and *Technical Appendix A: Exaggerating Benefits: A Critique fo the Hickling Lewis Brod Decision Economics, Inc. Analysis of Congestion Management Benefits of Light Rail*. These reports suggested superior alternatives to the proposed light rail system (including busways/high-occupancy vehicle/high occupancy tool lanes and improved freeway and surface street systems) and carefully reviewed projections made by light rail proponents. The proposal to construct light rail was defeated at the polls.

- San Francisco Bay Area Rapid Transit District – Study of procurement practices and the preparation of a procurement manual

- San Francisco Municipal Railway – Cash handling review

- Santa Clara County Transit District – Preparation of an indirect cost allocation plan

- Santa Clara Valley Transportation Authority – Assistance in the selection of special legal counsel for financings and human resources/labor/post-retirement benefits

- Texas Public Policy Foundation (San Antonio, Texas) – With Wendell Cox, I prepared a report, *Trolley Folly – A Feasibility Study of VIA's Light Rail Plan*, examining the feasibility and utility light rail/sales tax increase ballot referendum proposed by VIA Metropolitan

Thomas A. Rubin, Consultant (Concluded)

Transit in San Antonio. Along with other experts on both sides of the issue, I also participated in one televised and one webcast debate and made presentations to various audiences. The light rail/sales tax proposal was defeated, 70% to 30%.

I also assisted TPPF in its opposition to a referendum proposal by Dallas Area Rapid Transit to extend its debt term authority from the current five years to thirty years in order to speed construction of light rail lines and certain other transportation projects. My responsibilities included analysis of the cost per added trip ($37.70), review of sales tax growth projections, examination of passenger growth and fare increase projections, preparation and presentation of reports on these and related topics, and participation in a debate. Wendell Cox and I prepared *The DART Long Term Debt Issue: Unnecessary Costs and High Risks*, August 2000. The proposal was successful at the polls.

With Wendell Cox, I prepared a report for TPPF on long-term surface transportation options for the State of Texas, including debt financing, *The Road Ahead: Innovations for Better Transportation in Texas.*

- United Transportation Union – Assistance in labor contract negotiations and administration of pension plan, presentation to Joint State Senate/Assembly Special Hearing on strike

- United Transportation Union/Amalgamated Transportation Union – Analysis and response to MTA proposals to restructure transit service delivery in Los Angeles County and in responding to proposed changes in State legislation.

NON-TRANSPORTATION

THOMAS A. RUBIN, CONSULTANT

- Environmental Defense (*e*) (formerly Environmental Defense Fund – I assisted *e* in an open space project in the lower income, largely minority areas of Los Angeles County, including the establishment of soccer fields and training facilities. As a result of the activities initiated by *e*, a prime location in the core central city, originally planned to be converted to a warehouse/distribution center, was funded by the State of California to be made into a vitally needed inner city park.

- Los Angeles Unified School District – I am current working with the Construction Bond Citizens' Oversight Committee for the Los Angeles Unified School District – the second largest in the U.S. – assisting them in overseeing the expenditure of almost $10 billion in proceeds from a voter-approved bond issue and $5 billion in other funds for renovation of existing schools and construction of new ones. This is generally believed to be the largest construction program in the U.S. currently underway.

DELOITTE HASKINS & SELLS

- California Water Resources Control Board, Division of Water Quality (DWQ)

  - Operational audit of DWQ's billion-dollar-a-year clean water grant program
  - Information requirements study and management information systems design for a comprehensive management information system for the Board, including the preparation and presentation of a feasibility study report. I also did an extensive study of potential systems to meet the Board's requirements, resulting in the selection and modification of a system currently being used by another State agency.
  - Design of an audit program and organization of an audit and project oversight department for DWQ

- East Bay Dischargers Authority – Performance audit of capital projects

- Government of American Samoa – Design and implementation of a comprehensive MIS for all functions of a governmental activity that was responsible for every state, local, and special district governmental function, ranging from general purpose government to K-12 and community college education to health care to a port and airport to a development bank to a marine railway.

- Marin Municipal Water District – Assistance with review and project management change for management information systems project

Non-Transportation (Concluded)

- University of California, San Francisco Medical Center – Prepared procedures to reconcile UCSF's National Institutes of Health letter of credit for over a quarter billion dollars of grants over a ten year period

INDIANA UNIVERSITY - BLOOMINGTON (8/72-12/73)

While pursuing my Masters of Business Administration degree at Indiana University - Bloomington, I served as an Associate Instructor in the Accounting Department, teaching classes in beginning and intermediate accounting.

UNITED STATES NAVY (8/69-8/72)

I was commissioned as an officer in the Supply Corps, United States Naval Reserve, and attended the Naval Officer Candidate and Naval Supply Corps Schools. I served for two years in USS RANGER (CVA-61), an aircraft carrier, as EDP Officer, Wardroom Officer, and as director of a multi-million habitability improvement program during a major shipyard overhaul. I also taught a course on introductory accounting through the United States Armed Forces Institute.

PROFESSIONAL AND CIVIC ASSOCIATION ACTIVITIES

- American Dream Coalition – Executive Committee
- American Institute of Certified Public Accountants
  - Chair, UMTA Task Force – This group, which was formed at my urging, worked with the U.S. Urban Mass Transportation Administration (now Federal Transit Administration) and other interested parties (transit operators, APTA, U.S. Department Of Transportation Office of Inspector General, Transportation Research Board, American Association of State Highway and Transportation Officials, U.S. Office of Management and Budget) to establish procedures for reporting and auditing the statistical data that must be reported for the Section 9 (now 49 USC 5307) grant funding formula.
- American Public Transit Association
  - Associate Member Board of Governors (AMBG)
    - Chair, AMBG Contracting and Procurement Committee
    - Selected as a Director of APTA representing AMBG (could not serve after leaving the private sector to become SCRTD Controller-Treasurer)
  - Financial Management Committee
    - Chair, Nominating Committee
  - Internal Audit Committee
  - Management Systems Committee
  - Procurement and Materials Management Committee
  - State Affairs Steering Committee
  - Section 15 Committee
- Association of Government Accountants
- State of California Controller's Advisory Committee
  - Transit Sub-Committee (This group worked with the Controller's Office to develop the transit operator reporting standard for California Transit Operators)
- California Institute of Public Transportation

Professional and Civic Association Activities (Continued)

- California Transit Association
  - Executive Committee (Board of Directors)
- California Society of Certified Public Accountants
  - Management Advisory Services Committee, San Francisco Chapter
- Conference of Minority Transportation Officials
- District of Columbia Institute of Certified Public Accountants
  - Management Advisory Services Committee
- Financial Executives International (formerly Financial Executives Institute)
  - Treasurer and Director, San Francisco Chapter
- Government Finance Officers Association
  - Certificate of Achievement for Excellence in Financial Reporting Special Review Committee
- Greater San Francisco Chamber of Commerce
  - Chair, Wastewater Advisory Committee (Which helped the City formulate and approve a $1.5 Billion wastewater improvement plan)
- Hispanics in Transit
- Indiana University Alumni Club of San Francisco
  - President, various other offices
- Institute of Certified Management Accountants
  - Board of Regents
- Institute of Internal Auditors

Professional and Civic Activities (Continued)

- Institute of Management Accountants (formerly National Association of Accountants)
  - National Board of Directors
  - National Education Committee
  - Management Accounting magazine
    - Editorial Advisory Committee
    - Judge, Lybrand awards (best articles)
  - President and other offices, San Francisco Chapter
- Institute of Management Consultants
  - Board of Directors, Washington, D. C. Chapter
- Mount Tiburon Homeowners Association
  - Secretary
  - Director
- National Association of Black Accountants
  - Century Club
- Transportation Research Board
  - Section 15 committee
- Transportation Research Forum
- Union International des Transports Publics
- University of Nebraska-Lincoln School of Accountancy Advisory Board
- Women's Transportation Seminar
  - National Fundraising Chair
  - Treasurer, Washington Chapter

Professional and Civic Activities (Concluded)

- Yes on S
  - Treasurer, ballot issue committee that successfully supported the construction of the San Francisco Convention Center (now Moscone Center)

EDUCATION, LICENSES, AND PROFESSIONAL CERTIFICATIONS

Education

B.S.B.A., University of Nebraska, Lincoln, 1969, Finance and Accounting

M.B.A., Indiana University, Bloomington, 1973

Licenses

Certified Public Accountant (CPA) #23060, State of California, 1976

Certified Public Accountant (CPA) #4116, District of Columbia, 1982 (inactive)

Professional Certifications

Certified Internal Auditor (CIA) #15782, Institute of Internal Auditors, 1988

Certified Government Financial Manager (CGFM) #6064, Association of Government Accountants, 1996

Certified Management Accountant (CMA) #643, Institute of Certified Management Accountants, 1977

Certified in Financial Management (CFM), #323, Institute of Certified Management Accountants, 1997

Certified Management Consultant (CMC), Institute of Management Consultants, 1982

SPEECHES AND PAPERS

- 1977 APTA Western Conference – "FARE and How it Relates to Maintenance"
- METRO, October 1977, "FARE and How it Relates to Maintenance"
- "Funding and Procurement of Transit Industry Management Information Systems," DH&S, 1978
- 1979 APTA Western Conference – "Funding and Procurement of Transit Industry Management Information Systems"
- 1979 Institute for Transit Management – "Transit Finance and Accounting" (three-day seminar)
- 1980 Institute for Transit Management – "Transit Management Information System Design and Implementation" (two-day seminar)
- 1980 Mass Transit Magazine Maintenance and Purchasing Conference – "Funding and Procurement of Transit Industry Management Information Systems"
- 1980 Institute for Transit Management – "Transit Finance and Accounting"
- 1980 DH&S Mass Transit Industry Conference – "MIS Applications for the Transit Industry," "Transit Single Auditing"
- 1980 APTA Western Conference – "Life-Cycle Costing and Rolling Stock Procurement"
- 1981 Institute of Transit Management – "Transit Performance Measurement Systems and Performance Auditing" (three-day seminar)
- 1981 Institute of Transit Management – "Transit Management Information System Design and Implementation" (two-day seminar)
- 1981 DH&S Mass Transit Industry Conference – "Transit Single Auditing"
- 1981 British Columbia Transit Annual Conference – "Transit Performance Measurement"
- 1981 APTA Internal Audit Committee Training Conference – "Performance Measurement Systems as Planning and Monitoring Tools"
- 1982 APTA Eastern Conference – "Safe Harbor Leases of Transit Vehicles"

Speeches and Papers (continued)

- 1982 APTA Western Conference – "Safe Harbor Tax Leases of Transit Vehicles, Zero Coupon Bonds, and Other Current Transit Finance Topics"
- 1982 DH&S Mass Transit Industry Conference – "New Developments in Transit Single Auditing," "Safe Harbor Leases of Transit Vehicles"
- 1982 Women's Transportation Seminar – "Strategic Planning for the Transit Industry"
- 1982 Prepared problem statement for the National Cooperative Transit Research and Development Program (NCTRDP) to develop an automated national directory of application software systems that are useful to transit operators, which was accepted by NCTRDP and funded for $100,000
- 1982 DH&S ARMS Users' Conference – "The Application of ARMS to the Transit Industry"
- 1982 APTA Internal Audit Committee Training Conference – "Transit Single Audit"
- 1982 APTA Rapid Rail Conference – "Safe Harbor Tax Leases of Transit Vehicles, Zero Coupon Bonds, and Other Current Transit Finance Topics"
- 1982 Association of Government Accountants of New York – "Performing a Single Audit"
- 1982 District of Columbia Institute of Certified Public Accountants – "Operational Auditing"
- 1983 DH&S Transit Industry Seminar – "New Financing Opportunities for Transit Operators"
- 1983 APTA Internal Audit Committee Training Conference – "Reporting and Auditing of Section 9 Formula Grant Data Elements"
- 1983 APTA Annual Conference – "Safe Harbor Tax Leases of Transit Vehicles, Zero Coupon Bonds, and Other Current Transit Finance Topics"
- 1983 Indiana University Institute for Urban Transportation Workshop on Management Performance Auditing – "The Role of the External Auditor"
- 1983 APTA Internal Audit Committee Training Seminar – "Transit Single Auditing"
- 1983 DH&S Eastern Mass Transit Industry Conference – "Transit Performance Auditing"

Speeches and Papers (continued)

- 1983 British Columbia Transit Annual Conference – "Farebox Cash Control"
- 1983 Women's Transportation Seminar Annual Conference – "Strategic Planning for Transit Organizations"
- 1983 APTA Internal Audit Committee Training Conference – "Safe Harbor Leases"
- 1984 Transportation Research Board Annual Meeting – "Section 15 and Transit Performance Measurement"
- 1984 DH&S Eastern Transit Industry Conference – "Changes to Single Audit Requirements"
- 1984 DH&S Western Transit Industry Conference – "MIS Applications for Transit Operators"
- 1984 APTA Internal Audit Committee Training Seminar – "PC Uses in Internal Audit"
- 1984 DH&S ARMS Conference – "ARMS for Transit Performance Budgeting"
- 1985 Transportation Research Board Annual Conference – "Maximizing Section 9 Formula Grant Funding"
- 1985 APTA Eastern Conference – "Turnkey Management Information Systems"
- 1985 APTA Eastern Conference, Transit Board Members Seminar – "The Internal Audit Function - A Resource for Transit Board Members"
- 1985 DH&S Eastern Transit Industry Conference – "Transit GAAP and Auditing"
- 1985 Florida Transit Association Annual Meeting – "Maximizing Section 9 Formula Grant Funding"
- 1985 DH&S Western Transit Industry Conference – "Indirect Cost Allocation Plans"
- 1985 APTA Western Conference – "Turnkey Management Information Systems"
- 1985 APTA Western Conference, Transit Board Members Seminar – "Understanding Transit Financial Reports"
- 1986 APTA Western Conference – "Can Your Property Survive a Tri-Ennial Review?"

Speeches and Papers (continued)

- 1986 APTA Transit Board Members Seminar – "How to Better Understand Reports and Information Provided to You"
- 1986 DH&S Eastern Transit Industry Conference – "Capital Project Management Oversight"
- 1986 APTA Annual Conference – "Changes to the Section 15 System"
- 1986 APTA Annual Conference – "Financing Opportunities Through Beneficiaries (Benefit Assessment Districts)"
- 1986 DH&S Western Transit Industry Conference – "Maintenance Management Information Systems"
- 1986 UMTA Conference on "The Private Sector and Public Transit" – "Financing Opportunities Through Beneficiaries (Benefit Assessment Districts)"
- 1986 DH&S State and Local Government Conference – "New Developments in Single Auditing"
- 1987 APTA Western Conference – "New Developments in Transit Finance"
- 1987 APTA Eastern Conference – "The APTA Section 15 Committee and Modifications to the Section 15 System"
- 1987 DH&S Eastern Transit Industry Conference – "Upcoming Changes in Section 15 Reporting"
- 1987 APTA Annual Conference – "Changes in Federal Grant Administration Due to the Revision of OMB Circular A-102"
- 1987 DH&S Western Transit Industry Conference – "Transit Performance Auditing"
- 1988 UMTA Privatization Conference, Policy Board Influence on Transit Productivity Panel – "Transit Performance Measurement"
- 1988 APTA Eastern Conference – "Changes Recommended to the Section 15 System by the APTA Section 15 Committee"
- 1988 APTA Western Conference – "Changes Recommended to the Section 15 System by the APTA Section 15 Committee"

Speeches and Papers (continued)

- 1988 DH&S Eastern Transit Industry Conference – "OMB Circular A-102 Revisions, Grant Regulations, and Single Auditing"
- 1988 UMTA Transit Policy Boards Workshops – "Financial Capacity Analysis"
- 1988 DH&S Western Transit Industry Conference – "Project Management Information Systems"
- 1988 APTA Annual Conference – "The Mayor's Agenda – How Does Transit Fare?"
- 1989 APTA Bus Equipment and Maintenance Workshop and Maintenance Management Seminar – "Procurement Issues From the Supplier's Point of View"
- 1989 APTA Eastern Conference – "The PC Revolution"
- 1989 Alabama Transit Association Annual Conference – "Section 15 Reporting"
- 1989 DH&S Western Transit Industry Conference – "New Single Audit Requirements"
- 1989 APTA Transit Board Members Seminar – "Implementing Transit Performance Measurement and Board Reporting Systems"
- 1990 APTA Annual Conference – "Section 15 Update"
- 1990 APTA Annual Conference – "Measuring Transit's Progress – Where the Section 15 Data Reporting System and Triennial Reviews Are Heading"
- 1991 APTA Transit Board Members Seminar – "Transit Performance Measurement Systems and How They Can Be Integrated with Employee Compensation Systems
- 1991 APTA Annual Conference – "Bridging the Statistics/Management Gap: Using Statistics to Improve Productivity"
- 1992 – Westchester/LAX Chamber of Commerce – "Los Angeles County Transportation Alternatives"
- 1992 – U.S. House of Representatives Committee on Banking, Finance and Urban Affairs Subcommittee on Consumer Affairs and Coinage – "Why the Transit Industry Needs a Dollar Coin"

Speeches and Papers (continued)

- 1993 APTA Management Training Conference – "Presentations to Boards of Directors and the Public on Fare Options"
- 1993 APTA Management Training Conference – "Innovative Transit Financing"
- 1993 University of California, Irvine Transit Management Training Conference – "Financial and Performance Budgeting"
- 1993 University of Southern California, School of Urban and Regional Planning – "A Look at the Los Angeles County Metropolitan Transportation Authority"
- 1993 University of California, Los Angeles, School of Public Policy and Social Research – "A Look at the Los Angeles County Metropolitan Transportation Authority"
- 1994 APTA Management Training Conference – "What You Need to Know About Preparing a Comprehensive Annual Financial Report for a Transit Agency"
- 1994 – State of California, Joint State Senate/Assembly Transportation Committee Hearing – "Problems with the Los Angeles County Long Range Plan"
- 1994 Risk and Insurance Management Society – "Upper Managements' View of Risk Management"
- 1995 New Leaders Project – "Critique of the Los Angeles County Metropolitan Transportation Authority Long Range Plan"
- 1995 – State of California Senate Transportation Committee – "Financial and Management Viability of the Los Angeles County Metropolitan Transportation Authority Long Range Plan"
- 1995 KBFK-FM – "Los Angeles Long Range Transit Plan"
- 1996 Alameda County Transportation Authority Citizens Advisory Committee – "AC Transit Operations and Finance"
- 1996 APTA Financial Management Committee Western Conference – "Conceptual Outline for a Long-Term, Integrated, Planning/Budgeting/Performance Measurement/Compensation System"

Speeches and Papers (continued)

- 1996-97 Reason Foundation (with James E. Moore II), funded by Irvine Foundation (available at the Reason Foundation web site, www.reason.org):
  - "Why Rail Will Fail: An Analysis of the Los Angeles County Metropolitan Transportation Authority's Long Range Plan" (Policy Study No. 209, July 1996)
  - "Ten Transit Myths: Misperceptions About Rail Transit in Los Angeles and the Nation" (Policy Study No. 218, November 1996)
  - "Rubber Tire Transit: A Viable Alternative to Rail" (Policy Study No. 230, August 1997)
  - "Better Transportation Alternatives for Los Angeles" (Policy Study No. 232, September 1997)

- 1996 Union International Des Transports Publics Third International Light Rail Conference – "Is Light Rail Right for Los Angeles?"

- Los Angeles Times, "Commentary," December 13, 1996, page B9 (with James E. Moore II) – "Perspective on the (Los Angeles County) MTA: Admit Rail Plan Is Dead and Move On"

- PTI Journal, 1997 (Volume 11, Number 1) (with James E. Moore II) – "Rail Transit in Los Angeles: A Faustian Bargain?"

- 1997 – State of California Senate Transportation Committee – "A Performance Evaluation of the Los Angeles County Metropolitan Transportation Authority and Recommendations for Changes in the Governance Structure of Passenger Transportation in Los Angeles County"

- Los Angeles Times, June 15, 1997, page M6 (with James E. Moore II) – "The MTA's Love of Rail Must Yield to Reality of More Buses"

- 1997 – California Transportation Commission – "A Presentation to the California Transportation Commission Regarding the Los Angeles County Transportation Authority's Compliance with the Terms of S.B. 146 and MTA's Financial, Technical, and Managerial Capacity to Construct and Operate Rail Lines" (with Constance Rice)

- October 1997, *Cal-Tax Digest*, Volume 1, No. 8, pp. 15-19 – "Alternatives to Rail: Rubber-Tire Transit (with James E. Moore II)

- 1998 – State of California Assembly Transportation Committee – "A Presentation to the Assembly Transportation Committee on the Los Angeles County Metropolitan Transportation Authority's Restructuring Plan"

Speeches and Papers (continued)

- 1998 – KCRW-*FM, Which Way LA?* – Radio talk show discussion of MTA financial status and debt

- 1998 – *Up for Air* – KPFK-FM – Radio talk show discussion of MTA Restructuring Plan

- 1998 – KCRW-FM, *Which Way LA?* – Radio talk show discussion of impact of MTA Consent Decree Special Master decision and other recent developments on MTA Finances

- 1998 – Southern California Transit Advocates – *Public Transportation for Southern California: Directors for New Millennium*, panel discussion

- 1998 – UCLA, Guest Lecturer, graduate planning seminar, "Evaluating the Evidence in the Rail versus Bus Debate"

- 1999 – Public Works and Management, Volume 3, Number 1, *Analysis of the L.A. County MTA's 20 Year Long Range Plan* (with James E. Moore II)

- 1999 – "Valley Busway No Silver Bullet," Los Angeles Daily News

- 1999 – *Transport Policy 6* (1999), "Ten Myths About US Urban Rail Systems," (with James E. Moore II and Shin Lee), pp. 57-73

- 2000 – *Environmental Justice and Transportation Decisions – The Los Angeles Experience*, Transportation Research Board Annual Meeting

- 2000 – *Environmental Justice and Transportation Decisions – The Los Angeles Experience*, University of California-Berkeley Friday Transportation Seminar

- 2000 – *Environmental Justice and Transportation Decisions – The Los Angeles Experience*, American Association of State Highway and Transportation Officials/American Public Transportation Association/Association of Metropolitan Planning Organizations, Environmental Justice Workshop

- 2000 – "Learning From Los Angeles: Rail and Transportation Equity," *Tech Transfer* (University of California Berkeley Institute of Transportation Studies), Spring 2000

- 2000 – *Veritas*, Summer 2000, "The Future of Mass Transit in the United States: Can We Get There From Here?"

Speeches and Papers (concluded)

- 2000 – Papers for the Texas Public Policy Foundation, all with Wendell Cox (web versions available at www.tppf.org):

  - "Trolley Folly – A Feasibility of VIA's (San Antonio) Light Rail Plan
  - "The DART (Dallas) Long Term Debt Issue: Unnecessary Costs and High Risks"

- 2000 – Reclaim Our Allocated Dollars (web versions available at www.tppf.org):

  - "Trolley Folly – A Critical Analysis of the Austin Light Rail Proposal
  - "Technical Appendix A: Exaggerating Benefits – A Critique of the Hickling Lewis Brod Decision Economics, Inc. Analysis of Congestion Management Benefits of Light Rail"
  - "Options Ignored, Opportunities Lost: An Analysis of Affordable Transportation Options for Austin

- 2000 – "Market-Based Transportation Alternatives For Los Angeles," with James E. Moore II and Shin Lee, *Planning Markets*, University of Southern California

- 2000 – "Measure A Won't Cut Traffic," *San Jose Mercury News*, November 3

- 2000 – Guest lecture, UCLA graduate transportation planning seminar, "Transportation Decisions in LA – How Are They Made?"

- 2001 – Texas Public Policy Foundation, with Wendell Cox, *The Road Ahead: Innovations for Better Transportation in Texas* (web versions available at www.tppf.org)

- 2001 – Federal Reserve Board, Dallas, San Antonio Branch – *The Road Ahead: Innovations for Better Transportation in Texas*

- 2002 – Guest lecture, UCLA graduate transportation planning seminar, "Considerations in Transportation Modal Decisions"

- 2003 – American Dream Conference, Washington, D.C., "What to Expect in a Good Transit Plan – And How to Critique a Poor One"

- 2004, John Locke Foundation, Raleigh, N.C., "National Light Rail Update"

- 2004 – American Dream Conference, Portland, Oregon, "Urban Transportation Options – And How To Prevent Your City from Being Stuck With Someone's Bad Ideas"

- 2004, John Locke Foundation, Charlotte, N.C., "National Light Rail Update"

REFERENCES

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References (continued)

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(Assistant General Manager-Operations, SCRTD, while I was Controller-Treasurer, Performed review of productivity of labor agreement, compared Metro Transit [Minneapolis/Saint Paul] to peer group performance, and reviewed potential transit guideway corridor)
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United Transportation Union, AFL-CIO
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15999 Cyprus Avenue
Irvindale, California 91706
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References (continued)

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Former Chair, American Public Transit Association Finance and Internal Audit Committees
Former Chief Financial Officer, Metropolitan Transit Authority of Harris County (Houston)
(Former client for consulting services and long-time colleague)
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(Partner responsible for C&L audit and other services for SCRTD/MTA, 1989-present)
(213) 356-6021

References (concluded)

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Los Angeles County Metropolitan Transportation Authority
(Former President of the Board of Directors, Southern California Rapid Transit District)
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EXHIBIT II

THOMAS A. RUBIN LETTER TO MTA CEO ROGER SNOBLE, JULY 23, 2004

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Roger Snoble
Chief Executive Officer
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, California 90012

July 23, 2004

Via Hand Delivery

Dear Mr. Snoble:

I am writing as the authorized representative of Citizens Organized for Smart Transit (COST) to begin the communications process between COST and MTA in the preparation of the new Environmental Impact Report (EIR) that was recently mandated by the Order of The Court of Appeal of the State of California, Second Appellate District, Division Seven *in re Citizens Organized for Smart Transit v. Los Angeles County Metropolitan Transportation Authority* (B164434).

COST is pleased that MTA is commencing the process to perfect the California Environmental Quality Act process in this regard. While COST and MTA have obviously had significant differences on the North Hollywood-Warner Center Bus Rapid Transit Project, now named the "Orange Line" by MTA, we believe that we share an understanding that the proper resolution of our differences will be accomplished though the execution of a comprehensive, properly and fairly prepared EIR that meets all requirements of the CEQA process and redresses the deficiencies in the previous EIR identified in the Appellate Order. COST has worked hard to present our analysis and opinions all through the former EIR process and into the judicial arena and, now that our intermediate goal has been achieved, you can be assured that we fully intend to continue our intensive involvement in the new EIR process in order to produce a fully compliant Final EIR that both COST and MTA can be very proud of.

I will be the contact point for COST for matters relating to the preparation of the new EIR. I can be reached at the contact points above. (If this means of notification of my role is not sufficient, I would be pleased to have Ms. Lipari, COST Chair, execute a letter so designating me or, if necessary, have a formal communication to this effect from our Legal Counsel, John Henning.)

I would appreciate your designation of the senior MTA executive who will serve as my counterpart, which I believe will greatly strengthen the communications process. I propose that all communications regarding the EIR be between the party's respective contacts (other than any legal matters that will be communicated between the respective legal counsels), either directly or as "cc's." While there will obviously be other individuals involved from both COST and MTA in various matters, this process should be useful in ensuring and documenting proper communications. I suggest that e-mail be the primary mode of communications between COST and MTA personnel.

Getting into the details of the process to prepare the new EIR, we believe that it is in the best interests of both COST and MTA to begin communications early and to maintain effective communications throughout the process. Further, COST strongly believes that it will be far superior for both sides if we communicate our thoughts on technical and procedural matters as early as possible in the process. In short, we prefer to hear what MTA is planning early, offer our suggestions and advice early, and have MTA react early, rather than relying upon comments on the draft EIR and MTA responses in the Final EIR as the primary means of communications. We

would far prefer to have a product acceptable to us produced in the original process than to prepare comments on what we see as deficiencies.

While we expect that there will be a variety of matters that COST and MTA will be communicating regarding, there are three matters in particular that will require early decisions:

1. The methodology for identification, analysis, rating, ranking, and selection of the routes for the "multiple Rapid Bus routes" mandated in the Second Appellate's "Disposition" and the actual Rapid Bus routes and service characteristics and other service changes and characteristics.
2. The methodologies and metrics that will be utilized to compare and analyze the two (or more) alternatives, which we believe will be, at a minimum, the current "Orange Line" service and related enhancements as described in the existing FEIR, the "multiple Rapid Bus routes," and perhaps others as may be appropriate.
3. The "scope" of the new EIR, that is, which elements of existing FEIR will require revisiting in order to perform a proper analysis of the alternatives.

I suggest that we attempt to schedule a first meeting to discuss the above topics early next week.

Honestly, we doubt that COST and MTA will be able to agree on all aspects of the new EIR. We do, however, expect that a frank and cooperative working relationship will lead to full agree on many important items and at least partial agreement on many more. Further, we are willing to state, in writing, that we have agreed on those items that we find satisfactory. Our objective is *not* to produce an FEIR that is easy for us to again successfully challenge via the judicial process; but to have MTA adopt a FEIR that does not *require* any such challenge. We are sure that you recognize the benefits to MTA in having the input from the most knowledge and dedicated parties who participated in, and objected to, the former flawed process as early as possible in the process to correct the problems. We also are sure you recognize your responsibilities under the CEQA process requirements to gain meaningful community input, with emphasis on the segment of the community that obviously has the greatest interest in the proposed project and alternatives.

We are looking forward to joining with MTA staff and other interested parties in the preparation of a proper and fully compliant FEIR through a professional working relationship. We are prepared to spend any reasonable amount of our time and to respond as quickly as possible with our comments and suggestions in order to keep the process on any reasonable schedule. If both sides are prepared to approach this process in a cooperative manner, we believe that all parties will benefit.

We are looking forward to your response and to working with you on this important study and report.

Sincerely,

Thomas A. Rubin

Cc: Frank Roberts, MTA Chair
Steven Carnevale, MTA General Counsel
Jeffrey Z. B. Springer, Demetriou, Del Guercio, Springer & Francis
Diana Lipari, Chair, COST
John A. Henning, Jr., COST Legal Counsel

EXHIBIT III

ROGER SNOBLE LETTER TO THOMAS A. RUBIN, JULY 29, 2004

Metropolitan Transportation Authority

One Gateway Plaza
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Roger Snoble
Chief Executive Officer
213.922.6888 Tel
213.922.7447 Fax
metro.net

Metro

July 29, 2004

Thomas A. Rubin
2007 Bywood Drive
Oakland, California 94602-1937

Re: Orange Line Environmental Impact Report

Dear Mr. Rubin:

Thank you for your letter of July 23, 2004, offering your assistance as the MTA conducts a further environmental review related to the Orange Line project.

As you probably know, the MTA Board of Directors has authorized the filing of a Petition for Rehearing and, if necessary, a Petition for Review in the California Supreme Court of the decision of the Court of Appeal related to the need for further alternatives analysis to complete the Orange Line environmental review process. However, the MTA Board also directed staff to conduct the alternatives analysis described in the Court decision, even while that decision is being appealed.

This alternatives analysis will be conducted by a contractor with considerable expertise in environmental reviews who will be assisted by MTA Planning staff and by our retained environmental counsel. As the MTA conducts this alternatives analysis, if you would like to express your views or those of the Citizens Organized for Smart Transit, please feel free to do so by providing those views to this office in writing. We will forward any information you wish to provide to the Planning staff for consideration. Of course, any comments made by you or anyone else during the comment period will also be considered.

Thank you again for your interest in this matter.

Sincerely

Roger Snoble

EXHIBIT IV

THOMAS A. RUBIN LETTER TO ROGER SNOBLE, SEPTEMBER 16, 2004

THOMAS A. RUBIN, CPA, CMA, CMC, CIA, CGFM, CFM
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Roger Snoble
Chief Executive Officer
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, California 90012

September 16, 2004

Via Hand Delivery

Dear Mr. Snoble:

Thank you for your letter of July 29, 2004, responding to my letter to you of July 23, 2004.

I apologize for not responding earlier, but, as I am sure you are aware, there have been both a large number of event regarding the Orange Line that have required my priority attention and many of these events have impacted the technical issues discussed in the enclosure to this letter. Now that many of these legal issues have either been settled or at least presented to the California Supreme Court, it is appropriate to return to the technical issues that need to be addressed as part of the California Environmental Quality Act (CEQA) process.

As I explained in my earlier letter, I have been designed as the contact between Citizens Organized for Smart Transit (COST) and the Los Angeles County Metropolitan Transportation Authority (MTA) for coordination of our efforts to prepare the new Environmental Impact Report (EIR) for the study of transit alternatives in the San Fernando Valley. This new EIR will replace the earlier analysis and Final EIR that were utilized in an attempt to satisfy the CEQA requirements to allow construction of what is now known as the "Orange Line."

I am, of course, very well aware of the MTA actions in this regard that were announced at the MTA Board meeting of July 22nd and widely reported in the press. That was why my letter of July 23rd was prepared.

Evidently my early letter failed to make clear two important points:

- The strong desire of COST to work closely with MTA on this CEQA effort throughout the process, beginning with the extremely important initial planning and scoping of this effort.

- Time is of the essence in this process.

In my previous letter, I specifically asked you to designate a contact point for MTA, as COST as designated me at its contact point. Your letter states, "... if you would like to express your views or those of the Citizens Organized for Smart Transit, please feel free to do so by providing those views to this office in writing." Although perhaps you have not explicitly named yourself as the MTA contact point with COST, the above phrase, together with the lack of any other information regarding contact with MTA at this stage of the CEQA process, indicates that this must be your intended action. Therefore, I am providing our preliminary views on this process as an enclosure to this letter.

However, I urge you to delegate this responsibility to another person, either an MTA employee or a consultant, such as the project manager for this CEQA effort. As the CEO of MTA, you have many other duties and I am sure that you will have neither the time nor the detailed technical knowledge of the day-to-day work of this effort to serve as the primary contact person in an effective manner.

Also, the many other requirements on your time make timely response problematic. While I hand carried my first letter to your office on Friday, July 23rd, and followed up with additional attempts to contact you by telephone, e-mail, and facsimile, you did not respond until your letter dated (Thursday) July 29th. As your assistant informed me that you were not in Los Angeles Monday through Friday of that week, this loss of three working days is understandable, but points out how appointing yourself to the position of MTA's contact person with COST can impose significant delays in communications through no deliberate intention.

In fact, the weakness of this method of communications can be further illustrated by the other details of the timing of your response. While your letter is dated (Thursday) July 29th, the envelope mailing it to me has an MTA postage meter date of Monday, August 2. The letter was also faxed to me and has what appears to be the facsimile machine sender information line at the top, "MTA CEO Fax:213-922-7447 Aug 2 2004 9:22 ..." This indicates a further loss of two business days in from when the letter was prepared to when it was posted and facsimiled to me.

Finally, rather than responding to me via e-mail or telephone, to respond to my e-mails and phone messages to you in this matter, you communications were sent only to my home in Oakland, while I spend most of work week days in Los Angeles – a fact that I believe to be well-known to many at MTA. In total, almost two full weeks were lost between my hand carrying my letter of July 23rd to your office and my receipt of your response.

A less charitable person might consider the above record and speculate if it was MTA's intent to deliberately communicate in a manner far slower than modern communications makes the norm in our day-to-day working lives.

Although my letter specifically mentioned, "I suggest that we attempt to schedule a first meeting to discuss the above topics at your (meaning either you personally or your designated representative, as you may determine appropriate) earliest convenience," your letter has no

information as to when such a meeting will be scheduled. I again emphasize the importance of having this first meeting as soon as possible.

We are pleased that your letter states, "This alternatives analysis will be conducted by a contractor with considerable expertise in environmental reviews who will be assisted by MTA Planning staff and by our retrained environmental counsel." Constructing the project team is the vital first step in any project of this type and I'm sure that we are both very hopeful that this contractor can help MTA avoid the errors in the previous CEQA process that led to the Second Appellate Order that the EIR must be redone. Again, the sooner that COST representatives begin to meet with your personnel who will be conducting the new CEQA process, the sooner our expertise and advice in avoiding such errors can be added to yours.

Also, while the above discloses that the team for this project has been formed, you evidently forgot to state the names of the firms and MTA staffers (and their contact points) that will have significant roles in this project (although a recent *Daily News* article appears to indicate that your consultant firm has just recently been selected). So our request is clear, we would like the names of the external consultant, or consultants, and MTA's retained environmental counsel, and the names and contact points (phone number, fax, mailing address, and e-mail address) of the consultants, outside legal counsel, and MTA Planning staff and other employees that will be working on this project. Although we certainly have no objection to MTA providing this information by conventional United States Postal Service first class mail, we would also like this to be communicated to us by speedier means, such as e-mail, telephone, and/or facsimile (and let me provide you with a Los Angeles facsimile number for me in these EIR matters, 323/655-6109). We also request that this information be provided to us as soon as possible.

You will almost undoubtedly find the enclosure, with our views on the new EIR, lengthy and detailed. I propose that the best way for your CEQA team to gain an understanding of our views is via a face-to-face meeting, to be scheduled as soon as possible, where COST can make a presentation and respond to MTA's questions. Ideally, such a meeting will begin with MTA explaining its approach to this new CEQA process, but we are certainly willing to schedule multiple meetings if that is your desire. However, we again stress the extreme importance of commencing this process of conferring on the preparation of this EIR as soon as possible.

I will be available most of this week (September 13th thought the 17th) and next at the convenience of MTA and consultant staff.

We at COST are looking forward to working with the MTA team on this important project to produce a FEIR and a project recommendation that we can both be proud of.

Sincerely,

Thomas A. Rubin

Enclosure

cc: Frank Roberts, MTA Chair (w/enclosure)
Steven Carnevale, MTA General Counsel (w/enclosure)
Jeffrey Z. B. Springer, Demetriou, Del Guercio, Springer & Francis (w/enclosure)
Diana Lipari, Chair, COST (w/enclosure)
John A. Henning, Jr., COST Legal Counsel (w/enclosure)

* * * * * * * * * * * * * * * * * * * *

Acknowledgement:

Received.

Stacy Harden
Name/Signed

4:30 9/16/04
Date/Time

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John A. Henning, Jr., COST Legal Counsel (w/enclosure)

* * * * * * * * * * * * * * * * * * * *

Acknowledgement:

Received.

Stacy Marden
Name/Signed

4:30 / 9/16/04
Date/Time

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John A. Henning, Jr., COST Legal Counsel (w/enclosure)

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Acknowledgement:

Received.

Dorothy A. Dumas
Name/Signed

9/16/04 4:25 P.m.
Date/Time

SAN FERNANDO VALLEY
EAST-WEST TRANSIT CORRIDOR PROJECT

SIGNIFICANT CONSIDERATIONS FOR COMPLETION OF CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

INTRODUCTION

This paper is intended to comment on the scope of the anticipated Environmental Impact Report ("EIR") to be prepared by MTA as a result of the recent California Second Appellate decision in *COST v MTA*. It is our hope that by incorporating these comments in advance, MTA will produce an end product that demonstrates a comprehensive, fair, and professional study of the San Fernando Valley's transportation needs and evaluation of the alternatives to meet them in compliance with the requirements of the California Environmental Quality Act (CEQA) and other applicable laws, regulations, and case law.

While our major points are summarized here, with additional detail provided on selected items, it is our strong belief that the best way for us to communicate our thoughts is through a series of face-to-face meetings between personnel from COST and from MTA and its consultants. This is, of course, in addition to the other major outreach activities that we assume that MTA will be conducting. Through such a process, MTA and its consultants can better understand COST's positions through the presentation and question-and-answer process, before positions become more difficult to alter and while it is still easy to make changes.

As a threshold matter, because the addition to the EIR of a new Rapid Bus (also know as "Metro Rapid Bus" and "Metro Rapid") alternative requires a new comparison of that alternative to the busway project and other alternatives already studied, we request that MTA take notice of certain significant new information and changed circumstances that have developed since the MTA Board adopted the "Orange Line" FEIR in February 2002 cutoff for input into the original EIR. Given how much time has passed and how much has changed, we do not think it is prudent for MTA to assume for purposes of the new EIR that information about the original alternatives, or the baseline environmental conditions, is "frozen in time" over two-and-one-half years ago. To not reflect these changes would be to render an apples-to-oranges comparison.

OVERALL STANDARD FOR SELECTION OF ALTERNATIVES

Although the new EIR is not being prepared under federal law, we propose that the overall standard for selection of alternatives to be studied, specifically the network of Rapid Bus line that California Second Appellate has ordered MTA to study in any future EIR, be the standard required for Federal Environmental Impact Studies for "new starts," as promulgated by the Federal Transit Administration. When MTA prepared the Draft Environmental Impact Study/Draft Environmental Impact Report (DEIS/DEIR) for what we now know as the Orange Line, it was working under the "old" FTA regulations in this regard, which required a "Transportation Systems Management" (TSM) alternative. TSM is defined as (*Id.*, §4.3.1.2, page 36):

> "[T]he No Build Alternative *plus* lower cost transportation improvements (i.e., lower cost than the Build Alternative) which represent the *best* that can be done to improve mobility in the corridor without the construction of major new transit facilities." (Federal Transit Administration, *Technical Guidance on Section 5309 new Starts Criteria,* July 1999, §4.3.1.2, page 36)

Since MTA prepared this DEIS/DEIR, new regulations have gone into effect (the "new" regulations actually went into effect prior to the DEIS/DEIR being promulgated, but the "Orange Line" DEIS/DEIR was "grandfathered" into use of the "old" regulations), which replaced the former requirement for both "no build" and a "TSM" alternatives with a single alternative that combined the two former ones, the "baseline" alternative. The "baseline" alternative is defined in part, as:

> "In response to comments submitted on this issue and in recognition of the desire to simplify the new starts process, this Rule eliminates the requirement for separate no-build and TSM alternatives, and instead requires that the proposed new start be evaluated against a single 'baseline alternative.' The baseline alternative is best described as transit improvements lower in cost than the proposed new start, which result in a better ratio of measures of transit mobility compared to cost than the No Build alternative; the 'best you can do' without the new start investment." (FTA, 64 Federal Register, 17070-71, Appendix "A," VI., Section-by-Section Analysis, E., §611.9: Project Justification Criteria, page 76871.)

We wish to focus MTA's attention on two key, almost identical, phrases from the "old" and the "new" requirements, respectively:

> "... the *best* that can be done to improve mobility in the corridor without the construction of major new transit facilities."

> "... the 'best you can do' without the new start investment."

We are looking for a Rapid Bus alternative that meets these definitions and *is* "the best that can be done" without the extensive capital expense of the Orange Line. This will include both a network of East-West and North-South Rapid Bus lines serving the study area – which the DEIS/DEIR and the FEIR clearly established as the entire San Fernando Valley – plus *other* low capital cost transit improvements that are detailed below.

The evaluations of Rapid Bus alternative(s) that are not "the best that can be done" will not be satisfactory to COST, and would not, we believe, satisfy either the letter or spirit of the Court of Appeal decision.

We wish to make clear that there is one decision criterion, even a descriptive term, that will be totally unacceptable to us because it is demonstrably false. We refer to MTA's often cited contention that, "A Metro Rapid alternative was not included in the original Environmental Impact Report (EIR) because at the time the EIR was being written Metro Rapid was only a

demonstration project." (MTA Press Release, "Metro CEO Orders Work to Resume on Metro Orange Line," August 26, 2004) At the hearing on A.B. 1798 (that would have exempted the Orange Line from CEQA) before the State Senate Environmental Quality Committee, it was even stated that Rapid Bus was a demonstration project when the *Final* EIR was adopted.

Let us be extremely clear on two points: First, Rapid Bus was an overwhelming success from, quite literally, the first day it began service in July 2000. It was, without any doubt, the best transit action that MTA has ever done without the involvement of a court of law. Within a very short period of time, Rapid Bus a very significant part of the entire MTA transit planning structure. While there are a large number of documents – including many that were completed prior to the FEIR and are in the Administrative Record – that we can use to prove this statement, we will concentrate on two, the MTA Draft (issued February, 2001) and Final Long Range Transportation Plan (LRTP) (Adopted by MTA Board of Directors, April 26, 2001, http://www.metro.net/projects_plans/longrange/LRTP.htm).

On page 2 of the executive summary of the LRTP, included in the single short paragraph summarizing the "Plan Recommendations," we have, "Expansion of the successful Metro Rapid Bus program is a prominent component of the plan." On page 12, as a component of the "Constrained Plan" (which, as explained on page 10, is the "recommended" plan), we see, "Rapid Bus Program: Implementation of 22 additional lines" for $92.3 million, and the page 13, there is a map, "Existing and Proposed Metro Rapid Routes."

There can be no doubt: In April 2001 – the month prior to the *Draft* Environmental Impact Statement/*Draft* Environmental Impact Report being circulated, the MTA Board, the final and ultimate decision-making body of MTA, had adopted "expansion of the successful Metro Rapid Bus program" as "a prominent component of the plan" – and, we might add, as likely the most productive and cost-effective transit expansion component of the plan by a very wide margin. There was virtually no change from the February Draft to the April Final version of the LRTP in regard to Rapid Bus and, given the amount of time it takes MTA to prepare documents of this type, there is absolutely no doubt that the success and the importance of Rapid Bus were extremely well known to all levels of MTA staff months prior to the release of the Draft EIR for what we now know as the "Orange Line."

As to the second point, if MTA wishes to somehow maintain that Rapid Bus was still in a "demonstration" mode at the time that the DEIS/DEIR was released, then the same term would not be sufficient to describe the type of "heavy" Bus Rapid Transit that MTA wished to implement. At the time of the DEIR, there was only one such system in the U.S., the South Miami-Dade Busway. It began service in February 1997, but, due to extremely high collision/injury rates, had the "advance loop" bus detectors used to turn traffic signals for busway buses to "green" – the same technology that MTA proposes for the Orange Line – turned off in June of the same year. After many changes, they were turned back on in March 1999 – and, after more collisions, injuries, and the second busway fatality, were turned back off in December 1999 and were still turned off when the DEIS/DEIR was circulated and when the Final EIR was adopted in February 2002. (Miami-Dade Transit Excel™ spreadsheet provided by MDT safety staff.)

If Rapid Bus was still in "demonstration" mode when the DEIS/DEIR was circulated and the FEIR was adopted, then what term could be utilized to describe the mode that MTA adopted?

"Failed demonstration," perhaps?

SUMMARY OF SPECIFIC EIR CHANGE/ADDITION REQUIREMENTS

I. General Requirements – While there are certain segments of the February 2002 Final Environmental Impact Report that will need little more than updates and minor changes to produce the new EIR, there are many other sections that will require substantial new work. In Appendix I, we summarize our analysis of change requirements, following the Table of Contents of the 2002 FEIR, Volume I, pp. i-vi. This is intended only as an overview of the most significant changes, not as a comprehensive list of the extensive detail changes that will be required.

II. Alternatives to Be Considered – We recommend that all of the following alternatives, and perhaps others, be "placed on the table" for discussion, analysis, and decision:

a. Adopted Orange Line from old FEIR (updated, and as MTA may choose to modify)
b. Orange Line MOS-1 (we have no objection if MTA does not wish to include this alternative in the new EIR)
c. "No Build"
d. Transportation Systems Management
e. Rapid Bus network(s)
f. Rapid Bus networks (s) including other transit service enhancements (See. VI. Below)
g. Orange Line + Rapid Bus network(s)
h. Orange Line + Rapid Bus network(s) including other transit service enhancements (See. VI. Below)

We do not propose that each and every one of the foregoing potential alternatives require full development in the EIR. For example, "e." ("Rapid Bus network(s)") could include modeling of either a single Rapid Bus network or more than one network. At this point, before there is a more detailed study of the various streets where Rapid Bus may be most productive and the resources available for implementation, it is not possible to be definitive as to what specific network might be best. To give just one possible ultimate outcome, it may be found that implementing the Rapid Bus network in phases over time might be one option that appears strong enough to suggest inclusion as an alternative in the EIR proper – leading to a presentation of the phasing in of the "ultimate" Rapid Bus network in a manner very similar to the "minimum operating segment" alternative for what we now know as the Orange Line in the original EIR.

III. Evaluation Criteria for Alternatives

a. Cost/Revenue – Cost is the key measure of resource "input." Revenue, including capital funding derived from both internal MTA-controlled funding sources and from external grants and other sources, and operating and non-operating revenues, is a significant limiting factor in determining what projects and alternatives can be implemented.

The costing of the various alternatives in the new EIR will be close to a "start-over" process. The work in the old EIR to cost what is now known as the Orange Line and other alternatives will be of use, but even these costs will require considerable new analysis in detail.

The issues that arise fall into five major general categories: (a) Increasing the total costs of the Orange Line alternative to show the recent increases in cost, including those caused by the stay of construction and redoing the environmental clearance work, (b) Allocating the total cost of the Orange Line into "sunk" costs – those that have already been incurred plus those that would be incurred if the Orange Line does not emerge from the EIR as the alternative to be implemented – and the remaining costs to complete the Orange Line if it is approved for completion, (c) updating the costs of the other previously-studied alternatives in the old EIR that will be included in the new EIR, (d) determining the costs for the other alternatives in the new EIR, (e) adding certain costs of the Orange Line, and the other alternatives included in the old EIR, that were not comprehended by the costs included in the old EIR.

i. Capital[1]

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[1] Although there is evidently no longer any thought of utilizing Federal 49 USC 5309 "new starts" funds for the Orange Line – or, we assume, for any other of the other alternatives to be comprehended by the new EIR – and, therefore, there is no legal, regulatory, or contractual requirement to follow the Federal Transit Administration "new starts" evaluation methodology, we recommend that the "new starts" methodology for annualization of capital costs be utilized for the new EIR, as it was in the existing DEIS/DEIR and FEIR.

This methodology is the *de facto* national standard for costing major transit projects and offers the advantages of being able to utilize a methodology that is widely understood in the transit community, well understood and utilized by MTA and its consultants (we assume), and produces metrics that allow simple and valid comparisons to other transit projects.

1. Definition: California Public Utilities Code 130513[2] – "'Cost,' as applied to a project or portion thereof financed under this chapter, means all or any part of the cost of construction and acquisition of all real or personal property, rights, rights-of-way, franchises, easements, and interests acquired or used for a project, the cost of demolishing or removing any structures on land so acquired, including the cost of acquiring any land to which the structures may be removed, the cost of all machinery and equipment, vehicles, rolling stock, financing charges, interest prior to, during, and for a period after completion of construction as determined by the commission, provisions for working capital, reserves for principal and interest, and for extensions, enlargements, additions, replacements, renovations, and improvements, the cost of architectural, engineering, financial, and legal services, plans, specifications, estimates, and administrative expenses, and other expenses necessary or incidental to the determination of the feasibility of constructing any project or incidental to the construction, acquisition, or financing of any project."
2. "Cost Accounting" methodology[3] – there are two basic methodologies here, both of which are relevant to costing of the Orange Line, particularly for indirect costs, but for different purposes.

    a. The first is "fully allocated costs," where, for example, part of the cost of the MTA Human Resources department is allocated to the Orange Line based, for example, on the number of Orange Line employees and the total number of MTA employees. For compliance with Generally Accepted Accounting Principles (GAAP), Government GAAP, and PUC 130513, this is the proper methodology.
    b. The second is "marginal costs," where, in this situation, the costs allocated to a new activity are, in simple terms, the difference between the costs of transit service with and without a specific change in service. In most cases, the

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[2] Los Angles County Transportation Commission Revenue Bond Act (PUC 130000-53). The provisions of this PUC section are a fairly standard definition of "costs" found in identical, or substantially identical, form in at least ten different places in various sections of State Statutes.

As to applicability of this "LACTC" definition of cost to MTA, see PUC 130051.14: "On and after April 1, 1993, any reference in this part, or in any other provision of law or regulation, to the Southern California Rapid Transit District or to the Los Angeles County Transportation Commission or to the county transportation commission in general shall be deemed to refer to the Los Angeles County Metropolitan Transportation Authority."

[3] Although this discussion is listed under "capital" cost, it is equally applicable to operating costs and all revenues.

marginal costs of adding transit service are significantly lower than the fully allocated costs[4].

3. Items to be included:

   a. There are significant expenses of the Orange Line, under the PUC section above, that are not included as such costs in the existing FEIR. These include, for example, the capitalized interest costs during construction and the costs of Orange Line planning and environmental clearance.
   b. If MTA still plans to implement a Red Line North Hollywood Station portal on the West side of Lankershim, near the proposed Orange Line North Hollywood terminus, then we suggest that the cost – shown as $11.5 million in the *North-South Transit Corridor Study* – be shown as a cost of construction of the Orange Line.

      If MTA does *not* plan to open up this entrance, than the extra time for passengers to progress from the Red Line North Hollywood station platform, as well as the time required for bus passengers transferring from buses docking at the bus loading area on the East side of Lankershim to the Orange Line boarding area on the West side of Lankershim, should be considered in the time of travel calculations. This longer travel distance will impact the attractiveness of the various alternatives to transit riders and, therefore, the ridership projections – particularly since, as we are sure that MTA is aware, "walk" time is generally "weighted" at higher than actual value in transportation modeling.
   c. While both the DEIR and the FEIR showed transit ridership data for two decades in the future, and this and other future data was utilized to drive key decision factor calculations, we noted that, while the draft showed the costs of the "out year" bus fleet, the final adopted budget – post-FEIR – for the project only included the costs of the buses required to operate the service on opening day. Also, since the DEIR

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[4] We believe that MTA does have an understanding of how these two basic cost accounting concepts work, but sometimes has difficulty in their application to specific issues.

For example, when MTA was presenting the costs of adding bus service hours to Special Master Bliss in *Labor/Community Strategy Center v MTA* last year, it showed bus hours costed at what appeared to be "fully-allocated" rates of slightly over $100 per hour for most years in the six-year period that was analyzed.

At the MTA July 2004 Board meeting, when the Board took action to operate the added service that Special Master Bliss ordered, the average cost per hour appeared to be a "marginal" cost rate of slightly over $50 per hour.

We will be pleased to assist MTA in the application of the correct costing methodologies to the various factors to be costing in this EIR.

vehicle costs assumed an extremely expensive CNG/Hybrid or CNG/Electric Articulated vehicle – which MTA decided not to procure – and the final adopted budget was based on more conventional vehicles, there was a significant reduction in the vehicle line item costs. Interestingly, the amount of the reduction in the vehicles line item appeared to exactly match the amounts added to other line items, leaving the project total unchanged at $329.5 million.

If, as was done in the original EIR, the data for ridership, time savings, air quality, et al in the new EIR are based on a year 20 years in the future, then the costs of the Orange Line should also be based on the number of vehicles required to operate the Orange Line service, and other related service, in the same year. Of course, the unit cost of vehicles should be based on MTA's best professional estimation of the costs of the vehicles that would then be in use, which, we expect, will be based in large part on current vehicle costs.

d. The costs in the last EIR were based on an assumption that substantial funding would be received from the State of California. As we now know, approximately $98 million of the expected funding is not currently authorized and MTA has elected to "front" this State funding by borrowing against its own future sales tax revenues and the shift of funds from various transportation projects planned in the "out" years. At this time, there appears to be only a possibility that a small portion of the $98 million in Traffic Congestion Relief Act funding could be received any time in the foreseeable future[5]. Since the "repayment" of the funds fronted by MTA is, arguably, a "rob Peter to pay Paul" scheme that assumes that other funds will become available in the future to fund the projects that had their future funding shifted to future reimbursement of MTA Orange Line expenditures, there must ultimately be a recognition that, if the TCRA funds don't ever appear, then ultimately, choosing to "fund" the Orange Line in the way that MTA has elected will eventually mean that funds that could have been used for other Los Angeles County

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[5] While there is an allocation of $11.6 million for the Orange Line in the "Indian Gaming" funds recently negotiated by the Governor, we understand that these funds would not be forthcoming if either Proposition 68 or 70 is passed by the California electorate in November. If this issue is not resolved prior to the FEIR being prepared, then this matter would require proper disclosure in that document, as well as full discussion in the DEIR if that document is issued prior to the outcome of the November election being known.

transportation projects will not be available for those purposes.

We suggest that, in the absence of any specific authorization payment of this funding by the California Legislature that the $98 million be shown as MTA funding. We have no objection to a full discussion of the events, or even a mention of the possibility of this funding someday being authorized by the State, but, without specific legislation authorizing the actual *payment* of the $98 million, or some portion of it, with a day certain, we see no justification for showing a State funding source in the primary cost/revenue tables and discussion.

d. Capital Costs. We propose that the total capital costs for the Orange Line – both "sunk" costs and costs to complete the project – be treated as a single, combined category of costs, rather than broken out into these two categories. This is consistent with the legal principle that MTA may not justify its adoption of the busway alternative on the ground that it is less expensive to complete due to "sunk" costs, given that the sunk costs were a result of noncompliance with CEQA. (See *Laurel Heights Improvement Association v. Board of Regents of the University of California* [1988] 47 Cal.3d 376, 425 ["We shall not countenance any attempt to reject an alternative on the ground that the Laurel Heights site has already been purchased."])
e. Interest – We propose that the interest paid by MTA on debt issued to build the Orange Line, and for other alternatives analyzed in the new EIR, be identified, out to ultimate payoff of all project-related debt.
f. Sound Walls – In the old FEIR, it was assumed that the quieter "new generation" buses that were being procured would have a positive impact on noise levels that could, at least possibly, eliminate the requirement for sounds walls for certain points on the alignment. Since these buses are *not* being procured for the Orange Line, this opens the question if these sound walls will now be required.

   If it is not possible to make this determination at this time – in other words, if MTA intends to build the Orange Line without these sound walls, then test sound levels in full operation to determine if they are required – then we suggest that the costs of the sound walls be identified and shown as a "possible" cost in the new EIR. If, however, it can now be determined that the noise level of the buses that

MTA has procured for Orange Line use would require sound walls, then these would be *definite* costs and should be treated as such.

g. Cost overruns on Orange Line not due to stay of construction – We believe that the Orange Line may be subject to cost overruns for reasons that are independent of any stay order in *COST v. MTA*. The information in the *Metro Orange Line June 2004 Quarterly Project Status Report* shows that construction is currently approximately five months behind schedule[6]. Schedule delays and cost overruns are very often closely associated in major civil construction projects such as the Orange Line. While a design-build contract does generally include a laying off of part of certain risks on the contractor, one of the major causes of the delays – differing site conditions, specifically contaminated soil – is generally a risk that is retained by the owner.

   There are certainly costs imposed by the stay that are not due to any problems of MTA or its contractors. However, Orange Line cost overruns *not* caused by the stay, or by a subsequent injunction, should not be treated as if they were. Similarly, schedule delays due to factors other than any court-ordered stay of construction should not be associated with that stay.

h. "Boeing" Park-and-Ride Lot – After the adoption of the FEIR by the MTA Board of Directors in February 2002, MTA has evidently determined that a park-and-ride facility at the "Boeing" site be constructed and operated with a shuttle service between the parking lot and the Warner Center Orange Line terminus. For many months, this has been shown in the Monthly and Quarterly Metro Orange

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[6] "Schedule Narrative," page 10, states, "The C0675 Design/Build Contractor submitted a Current Schedule update this period that reflects an improvement of 3 calendar days to their Substantial Completion Milestone No. 4 (now at 89 days negative float)," which is evidently the source, or related to the source, of statements from MTA personnel that the Orange Line is three months behind schedule. (The C0675 contract is the primary contract for the Orange Line.)

However, "Contract C0675 Physical Percent Complete," page 27, shows "Construction Percent Complete" at 29.6% as of "Jun-04" (which we presume means as of the *end* of June, 2004). This is the level of construction completion that was *exactly* what was planned for the end of January, 2004, five months prior (January Project Status Report), and the difference between actual and schedule completion appear to have increased every month from January to June, 2004.

While there are multiple ways of describing schedule adherence, and the *Status Report* does discuss methods to make up lost time, our calculation of five months behind schedule using MTA data is certainly the most common method of calculation of schedule adherence, and we believe that there are very good reasons to believe that there may be significant problems in meeting the scheduled revenue operations date.

Line Program Status Reports as, "Proposed Park-and Ride Facility with a total cost of $16.5 million and, most recently, "Commitments" and "Expenditures" both at $8.3 million – which tends to indicate that this is something more than "proposed." In "Concern No. 3." under "Management Issues" in the Status Reports clearly states, "The western terminus at the Warner Center Transit Hub does not currently include parking for Orange Line project patrons. In February 2004, the MTA Board approved proceeding with negotiations to purchase the Boeing site identified, as the MTA preferred option for a park-and-ride site." This clearly indicates that this is an "Orange Line" cost that was not comprehended in the adopted FEIR.

ii. Operating Cost/Revenue

1. Operating Cost per Bus Revenue Hour – We strongly suggest using "marginal" costing for all service and for all alternatives. Although MTA may calculate and report data for "fully allocated" costing of services and alternatives, we believe that "marginal" costing is clearly the proper methodology to be utilized in this type of decision-making situation[7].

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[7] For a comprehensive comparison of Fully-Allocated vs. Marginal Costing, I refer you to the Declaration of Thomas A. Rubin re Consent Decree Costs, October 14, 2003, in the Proceedings Before Special Master Donald T. Bliss, specifically pages 6-9 of "Notes."

In summary, as applies to MTA bus operating costs, there are two major differences between the MTA fully-allocated-costing methodology for calculating the cost of an hour of bus service and the marginal costing methodology: (1) There are many MTA costs that do not change significantly, if at all, for small-to-medium-sized changes in revenue vehicle hours. For example, if additional buses are operated out of an existing MTA bus operating division, the Division Manager does not normally get a raise in pay and most, if not all, other administrative and supervisory positions will also not change, or not change significantly, in cost. (2) The cost of adding hours of service is less than the average cost of existing service that MTA utilizes to calculate fully-allocated-costs. The best example of this is the hourly pay of bus operators. In Attachment 7 to his Declaration, Mr. Rubin shows that the "UTU (United Transportation Union, the bargaining unit for MTA bus operators) Wages and Benefits" per bus service hours was calculated by MTA as $36.40 for MTA Fiscal Year FY03. This is based on the average wage rate for all MTA bus operators, which includes a large number of bus operators who are at the top of the wage scale, then $22.34 per hour. However, at that time, MTA had executed a Labor Agreement with UTU that provided for new full-time bus operators beginning (at that time) at $12.27 per hour, working up to a (then) maximum of $18.88 per hour after 42 months of MTA employment. MTA also makes significant use of two other provisions of the UTU Labor Agreement that provide for even lower hourly costs for operators, those for "part-time" and "Business Development Operating Facility" operators, which provide for wages (at that time) of $12.27 to $15.10 and $10.93 per hour, respectively, with employee benefit costs far lower than those that MTA provides for full-time operators.

Overall, MTA showed FY03 fully-allocated operating costs of $102.46 for its Directly Operated Service (the service not operated by contractors), while Mr. Rubin, using conservative assumptions that overstated marginal costs, showed $63.96 per hour, or 62.4% of the MTA fully-allocated cost. In Appendix 6 of his Declaration, Mr. Rubin showed that MTA presented an average *marginal* cost per hour for adding Rapid Bus service of $58.97.

2. Fare revenue – While cost is always a key driver in decisions such as this, the traditional focus has always been the "gross" cost of constructing and operating a transit project or program, rather than on what is actually the key financial constraint, that of available taxpayer funding (and occasionally other non-operating financing sources). To the extent that a transportation alternative is self-financing through revenues generated by the operation of the transit system, the call on taxpayer funding is reduced and the project is more financially viable. Therefore, we request that operating revenue, chiefly farebox revenue, be projected for each alternative to allow the calculation of subsidies as well as costs.

b. Ridership/New Ridership and Passenger Miles/New Passenger Miles[8] – This is the key "output" or "results" metric. We expect that ridership values will be produced for each alternative that will show both the ridership on the "new" lines or services and the overall system-wide changes in total ridership.

   For the alternatives with multiple individual routes, we recommend that MTA show ridership by route. This is a key tool in fine-tuning the various alternatives prior to final comparative analysis. For example, for a multiple Rapid Bus route alternative originally laid out with four East-West Rapid Bus lines, if three of these had strong ridership and one weak ridership, one obvious change to study would be to drop the least utilized Rapid Bus line from the alternative.
c. Cost per new rider/passenger-mile – This – along with subsidy per new rider – is the key cost-effectiveness metric[9].
d. Subsidy per new rider/passenger mile – While cost and subsidy per new rider are both frequently used as metrics for comparison of alternatives, we favor subsidy per new rider because it focuses attention on the amount of *taxpayer*-generated funding required. In transit capital/operating investment decisions, it is subsidy, not cost, that is the true limiting factor. All else equal, a transit alternative that requires less taxpayer funding to achieve a specified level of performance, or can produce a higher level of performance for a comparable level of taxpayer investment, should be favored.
e. Existing transit rider travel time savings – This is an important metric because it focuses on benefits to existing riders, which is overlooked entirely by the cost/ subsidy per *new* rider metrics. As we are sure MTA staff is well aware, the proper format, calculation, and presentation of this metric has been a topic of intense discussion in the industry for decades. The specifics of our proposal in this regard are:

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[8] As a general rule, for each metric that utilizes ridership, we suggest a similar metric that utilizes passenger miles.

[9] Technically, we are talking about the "incremental cost per incremental passenger" metric found in the FTA "new starts" methodology, but "cost per new passenger" is the far wider utilized and understood term.

i. The current FTA metric for cost-effectiveness – incremental cost divided by transportation system benefit[10] – should be utilized. Although there is no Federal "new starts" funding proposed for this project, this metric is the new national standard and its use will provide comparison data to other projects around the U.S.[11]

ii. In addition to the new FTA metric, the other key metrics utilized should be total, and average, origin-to-destination time change for all existing riders and a specified subset thereof. While we would prefer that total time be the metric, the obvious problem is that, with the changes in the transportation system from the various alternatives, there will undoubtedly be different numbers of existing riders choosing to remain or not remain as transit users. The use of the average will allow valid comparisons. (The net change in existing riders by alternative is itself an interesting statistic which may be utilized to show that "greatest good for the greatest number"-driven decisions sometimes have significant downsides for minorities.)

iii. The "specified subset" of the existing riders mentioned above is the riders that will actually be directly impacted by each individual alternative. Very likely, for each EIR alternative, there will be a very large number of Valley transit users that will see no change at all in their travel patterns. For each alternative, we believe the public should know the number of existing riders that will see their transit travel changed and the net change in travel time, both in total and in average.

iv. In all cases where transit passenger travel time is being produced, we recommend two metrics:

    1. Actual "clock" time
    2. Perceived time

    It is well understood in transportation modeling that travelers tend to make their travel decisions, to a large extent, not on actual "clock" time, but on perceived time. Time spent not in motion – in transit travel, waiting for the first transit vehicle and waiting for transfers – is weighted far more heavily than time in motion, commonly at least double actual clock time, with 250% being common being a common factor (in other words, if a traveler has to wait ten minutes for a transfer to the second transit vehicle, the traveler may base decisions on which transportation modes to utilize by considering this wait time as twenty-five minutes, or more, depending upon the factors utilized by each modeler in each model run). In such

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10 Often, but not exactly properly, called "cost per travel hour saved."

11 The *Major Transit Capital Investment Projects Final Rule,* referred to as the *New Starts Final Rule,* was published in the Federal Register on December 7, 2000 and became effective on April 6, 2001. The *New Starts Final Rule*, 49 CFR Part 611, establishes the methodology FTA will apply in the evaluation and rating of proposed New Starts projects as required by 49 U.S.C. 5309(e).

models, there may be different weightings for the "first" vs. "subsequent" transit trips, or not, as well as different weighting factors for "walk" access times (with a 150% clock time weighting for the type of walk time being common in transportation modeling).

We ask for the presentation of the travel times for ***both*** of the above – actual "clock" time and traveler-perceived time – in order to allow decision-makers to actually see how the users of the transit system view the utility of the various alternatives.

We also recommend that the various factors – such as "wait time weightings" – utilized in MTA's transportation models be specified. We also wish to know of any "modal preference" factors utilized in the model runs – such as assumptions that riders will have a preference for utilizing a mode such as Bus Rapid Transit over other bus modes specified[12]. If such modal preference(s) is/are utilized in the MTA modeling process, the analysis should justify it/them, along with the required acceptance of the analysis(es) by the Federal Transit Administration[13].

In making this request, we bear in mind that, while speed of travel is often one of *the* most important factors in travelers' decisions as to how to complete their trips, this is a far broader factor that the travel speed of transit vehicles – a simple fact of life that many proponents of higher speed transit often either do not realize or choose to overlook because it interferes with gaining acceptance of their proposals. Vehicle travel speed is a factor in travel time decisions, but only one of many, and often not a very important one, particularly when the travel distance on a particular mode – such as the Orange Line – is short, or the access time to the favored higher-speed mode is such that the favored mode is simply not useful to many travelers.

The "other" factors that go into total travel time calculations include access time at both ends of the trip and for any required transfers between transit vehicles and wait times for each transit vehicle (which, as is discussed above, are weighted far higher than actual clock time, as is "walk" time). The network of Rapid Bus lines that we request MTA to

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12 To be clear, we are discussing preferences based on the mode *itself*, not the *attributes* of the various modes. We are *not* discussing preferences based on valid differences in attributes, such as a preference for heavy rail over bus because the speed of heavy rail is higher than that of bus for a specific traveler's transit trip. We are talking about riders or potential riders, for example, who might state, "I will ride a subway to get to work, but nothing in the world will get me on a bus" – and then demonstrate revealed preference comparable to – or not – to the stated preference.

13 While the information discussed above appears to be a major data set that would require substantial work to produce, our understanding of the MTA transportation model and modeling process is that everything we have specified is routinely produced in its normal operation; in fact, the models could not be run without producing these data.

evaluate will, without any doubt, be significantly faster than existing local bus service for travel time. We believe that Rapid Bus can actually produce vehicle travel speeds that are competitive with the "full" Bus Rapid Transit mode proposed for the Orange Line, but, even failing this[14], we believe that a network of good Rapid Bus lines can still be very competitive with the Orange Line for many travelers in the Orange Line corridor and will be demonstrably superior to the Orange Line for travelers outside of the corridor that cannot make any beneficial use of the Orange Line.

f. Other Metrics – There are many other metrics that MTA may choose to utilize. To the extent that MTA chooses to utilize metrics other than those listed above, we request that you brief us on those metrics and how they will be calculated before they become part of the basis for the analysis in the new draft EIR.

IV. Rapid Bus Route Alternatives to Be Considered for inclusion in Alternatives II.e.-g., inclusive. (Line numbers below are those of existing MTA "local" lines and, where applicable, Rapid Bus lines now in operation. Lines numbers beginning with "7" – such as 750 for Ventura Boulevard – are Rapid Bus lines. For those streets where there are multiple local bus lines, only the primary local bus line that which operates the longest on the street is shown.)

a. Rapid Bus Currently in Operation

1. Line 750/150 – Ventura Boulevard (East-West)
2. Line 761/233 – Van Nuys Boulevard (North-South)

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[14] In various papers that MTA has file in the current Orange Line CEQA dispute, it has maintained that Rapid Bus was not studied for East-West lines in the San Fernando Valley because it will not be possible for Rapid Buses to achieve beneficial traffic signal progression or preference. Our discussions with LA-DOT personnel lead us to believe that these are not matters that have been settled – because they have never been investigated. We request that as part of the new EIR process, an honest effort be made to determine what traffic signal progression and preference benefits can be achieved for East-West Rapid Bus lines in the San Fernando Valley.

At an absolute minimum, we would expect that a Rapid Bus line between North Hollywood and Warner Center will achieve such benefits comparable to what will provided to the Orange Line and that the travel time projects for these two alternatives be calculated on the basis of similar assumptions.

In this regard, we note that even if there were absolutely no traffic signal progression and/or preference benefits for East-West Rapid Bus in the Valley – a condition that so unlikely that, to be justified would require significant documentation of actual positions taken by MTA staff and consultants, supported by substantial evidence of same – Rapid Bus would still provide significant vehicle speed improvements over existing local bus route speeds through limited stop service and the other techniques that have been applied to MTA's existing Rapid Bus lines.

In addition, the total travel time of non-Orange Line alternatives can be reduced significantly by higher frequencies of service and by new bus routes and route variations, such as we are proposing elsewhere in this paper that reduce walk and wait time for transit vehicles and eliminate transfers.

b. Rapid Bus Approved for Implementation[15]

1. Lines 96/166 – San Fernando Road/Lankershim Boulevard (Northwest-Southeast to North-South, Phase IID, December 2006-June 2007)
2. Line 234 – Sepulveda Boulevard-Brand Boulevard (North-South to Southwest-Northeast), Phase IIB, December 2004-June 2005)[16]
3. Line 240 – Reseda Boulevard-Nordhoff Street-Sepulveda Boulevard-Brand Boulevard (North-South to East-West to North-south to Southwest-Northeast, Phase IIC, December 2005-June 2006)

c. Potential Additional East-West Lines (listed from North to South)

1. Line 158 – Devonshire Street
2. Line 168 – Lassen Street
3. Line 166 – Nordhoff Street
4. Line 152 – Roscoe Boulevard
5. Line 163 – Sherman Way
6. Line 165 – Vanowen Street
7. Line 164 – Victory Boulevard

d. Potential Additional North-South Lines (listed from East to West)

1. Line 163 – Hollywood Way
2. Line 152 – Vineland

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15 "Metro Rapid Phased Implementation," http://www.mta.net/projects_plans/rapid/maps.htm.

16 We are unclear as to the status of the improvements to Valley transit service comprehended by the *North-South Transit Corridor* project. While the Major Investment Study for this project comprehended a variety of Rapid Bus lines in several phases, the project, as such, appears to have been suspended, at least in part, when the promised State funding vanished. However, we know that MTA is continuing to implement Rapid Bus lines, including service on streets listed in the *North-South Transit Corridor* documents. Therefore, we will assume that that the schedule in the above citation re Rapid Bus implementation will hold, independent of what may or may not be implemented on the *North-South Transit Corridor* project – and the State funding unavailability will not be an issue in their implementation. (If we are incorrect in this assumption, please provide the correct information.)

One option would be to assume that, for an alternative where it is assumed that Orange Line is not constructed, that funding that would have gone for the Orange Line will be shifted to pay for major capital improvements to North-South service. However, we do not recommend this approach. We believe that any analysis or series of analyses that treats East-West and North-South transit travel in the Valley separately is fundamentally flawed. We recommend instead a coordinated, simultaneous study of North-South, East-West, and all other transit travel.

For example, due in part to the long (East-West) and narrow (North-South) shape of the Valley, there are many opportunities to couple North-South and East-West Rapid Bus streets into single routes. MTA has approached this concept with the proposals in the EIR to run BRT on the Orange Line with some routes that will leave the Orange Line to operate North-South service. However, the non-Orange Line portion of this service is proposed as conventional bus service, not as Rapid Bus service.

Many of the existing bus routes in the Valley have both North-South and East-West components now, and we believe that similar construction may prove useful in structuring the optimal network of the Rapid Bus routes and other transit service improvements.

3. Line 166 – Lankershim Boulevard (Note: There is a line approved for operations on Lankershim, but it is shown as having a Southern terminus at the North Hollywood Red Line Station. We suggest studying operating further South on Lankershim to the Universal City Red Line Station.)
4. Line 230 – Laurel Canyon Boulevard
5. Line 167 – Coldwater Canyon Avenue
6. Line 158 – Woodman Avenue
7. Line 236 – Balboa Boulevard
8. Line 239 – White Oak Avenue
9. Line 154 – Tampa Avenue
10. Line 243 – Winnetka Avenue
11. Line 243 – De Soto Avenue
12. Line 245 – Topanga Canyon Boulevard

e. Potential Additional Northwest-Southeast Line – Line 94 – San Fernando Road (for portions not included in current MTA implementation plan)

f. Potential Southwest to Northeast Line – Line 180 – Hollywood/Glendale/ Pasadena/Altadena/North Lake Avenue via Colorado Boulevard (partially in San Fernando Valley)

g. Initial Suggestions for Rapid Bus Service – We offer the following as potential added Rapid Bus lines, or extensions, that we see as having strong potential for significant ridership increases and time savings for existing San Fernando Valley transit users:

1. Victory – We suggest a Rapid Bus line on Victory running from the Burbank central business district and/or the Burbank Metrolink Station in the East to Warner Center and/or further West, perhaps all the way to Valley Circle Boulevard.
2. Sherman Way/Lankershim – We suggest a Rapid Bus line beginning at the Universal City Red Line Station, past the North Hollywood Red Line Station, then to Sherman Way.
3. For the Victory and Sherman Way/Lankershim Rapid Bus lines, we suggest studying route deviations. Specifically, Rapid Buses starting from the Universal City Red Line Station could turn West, alternately, on Victory and Sherman Way, and Rapid Buses starting from the Eastern terminus of the Victory Line could, alternately, continue West on Victory and turn North on Lankershim and then West on Sherman Way. We suggest this option because, for many San Fernando Valley transit users, the transfer wait time, together with having to utilize two different vehicles, is far more of a problem than a longer headway.
4. Topanga Canyon – We suggest continuing Rapid Bus service on the existing 750-Ventura line up Topanga, perhaps alternating service to Topanga and Warner Center.
5. We suggest looking at one-bus service between the high transit demand areas in the Northeastern areas of the Valley and the major East-West

transit corridors, such as Sherman Way, Van Owen, and Victory. Options to be studied include (running from Northeast to West):

i. Branford and/or Osborne to Woodman to Sherman Way, Van Owen, and/or Victory. Since we have proposed Rapid Bus lines on Sherman Way and Victory previously, running a line on the Western segment of the highly traveled Van Own bus line may be a good idea.
ii. Van Ness to Sherman Way, Van Own, and/or Victory[17].

V. Considerations in Selecting Rapid Bus Routes for Inclusion in EIR Analysis – We propose that MTA use the following considerations in arriving at Rapid Bus routes for inclusion in the EIR analysis:

a. All Rapid Bus routes currently in operation or Approved for Implementation (IV. A. and B. above) should be "grandfathered" in *all* alternatives
b. Victory Boulevard should be included in Alternatives II.e., II.f., II.g., and II.h.[18]
c. Routes already planned – We know that MTA has a plan for further expansion of Rapid Bus over the next several years. However, we have major problems with this plan – which was adopted by the MTA Board on the same day that it adopted the SFV BRT – in that we find, oddly, that MTA does not propose one additional East-West Valley arterial for Rapid Bus (which the exception of a short East-West leg for the "Reseda" line). Our problems with the methodology utilized to select Rapid Bus lines are discussed in Appendix II. In summary, we believe that MTA started with a deficient selection methodology and then applied it incorrectly,

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[17] We do not have access to the detail of origin-destination pairs that MTA does, so we are forced to suggest bus lines without being able to see the actual current usage and potential future usage. We are proposing a number of existing East-West bus routes for Rapid Bus service, beginning with the three most heavily utilized existing routes, those on Sherman Way, Van Own, and Victory. We believe that there are likely to be other East-West lines further North where such service may be justified as well.

We are also suggesting running Rapid Bus on other than strict one-street routes. Here, the analysis of routing should certainly take into account the existing and potential travel patterns for bus riders.

[18] At first glance, it may appear odd to suggest studying a Rapid Bus network that includes an East-West line on Victory Boulevard *with* the Orange Line because there are sections of the Orange Line that are directly adjacent to Victory. However, we do not believe that this proximity, in and of itself, should be cause for eliminating Victory from consideration for Rapid Bus service, for several reasons.

First, the Orange Line is immediately adjacent to Victory only for two sections, totaling a few miles of length. There are far more miles of the Orange Line and Victory which are well beyond the normal quarter mile walking distance assumption commonly utilized in transportation modeling. Second, we see the Victory line extending far to the East of Lankershim, where the Orange Line terminates, most likely to the center of the Burbank business district and/or to the Burbank Metrolink station. Third, the proper test of what types of transit service should be operated on which route alignments often has little to do with transit lines "running on top of each other." If there is a demand for different types of services on the same alignment, then two or more types of service may very well be justified. For example, on both Wilshire Boulevard and Vermont Avenue, MTA currently operates local bus service, Rapid Bus service, and rapid rail (Red Line) service. (In fact, it is very common, in urbanized areas all over the world, to find major bus routes on top of rail lines and for many different types of transit service to be operated in a very narrow transit corridor.) Finally, the capital cost of adding Rapid Bus service to existing routes is very small and the added operating costs may actually be offset by the added fare revenue from new passengers.

violating its own stated methodology. Therefore, we believe that the proper process to select Rapid Bus routes in the Valley for inclusion in the new EIR alternatives is to start fresh, without using the previous, flawed analysis for anything save a supply of data, where such data is complete, accurate, and applicable.

d. Screening Methodology – We propose an initial screening methodology based on existing frequency of service, average passenger load, average trip length, and line length. (For details of why this methodology is proposed, see Appendix II for a discussion of the problems of MTA prior methodology.) After a short list is developed through this step – excluding those lines with obvious low Rapid Bus potential – we then propose bringing in connectivity and potential trip generation increase factors as considerations to lead to a professional judgment selection of the final lines to be included in the Rapid Bus network(s) for modeling and comparison of results.

   For the key factor in this analysis, we cite the Second Appellate decision (page 28): "MTA's arguments are insufficient justification for not considering Rapid Bus as they only tend to show that Rapid Bus would be somewhat slower than BRT, they do not take into account the effect multiple east-west routes would have on total origin-to-destination time verses a single busway, and a longer travel time does not render Rapid Bus infeasible or otherwise justify its rejection."

   There is absolutely no question about the intent of the above. MTA should consider not just time in motion on Orange Line buses vs. Rapid Buses on a comparable, North Hollywood to Warner Center routing, but also consider travel time from the starting point of the trip to the end point, including walk and other access times, time spent on transit and other vehicles other than those operating on the Orange Line and Rapid Bus routes, transfer wait times, etc. This *is* the key factor in any proper corridor planning study such as this one and it *is* the factor that MTA has been ordered by a properly constituted Appellate Court to employ.

e. Quantity of Service – Besides the number and location of arterials and routes to be given Rapid Bus treatment, the *type* – or, more precisely, the *quantity* of Rapid Bus service to be operated and the mix of Rapid Bus and conventional bus service – is also critical to a selection of the appropriate routes for comparison. MTA's first two bus routes – Line 720/Wilshire-Whittier and Line 750-Ventura – were implemented in way that was designed to increase bus ridership, and this was extremely successful, producing ridership increases of 25% to 40%. However, the more recently implemented Rapid Bus lines have been implemented in a different manner, evidently designed to reduce operating expenses.

   Rapid Bus has the interesting characteristic of not only offering superior transit service for passengers who are willing to trade fewer stops for faster vehicle travel speeds, but lower operating costs per revenue vehicle mile of service and, in most cases, per passenger and per passenger mile. The reason for this is that, because Rapid Bus buses travel faster than local service buses, there are more round trips per shift for each bus and for each bus operator, thereby lowering both

We recommend revisiting hub-and-spoke transit at selected Valley locations where the payoffs are obvious and it may not be impossible to take another shot at the political process.

b. Additional Express Bus service on freeways, particularly where HOV lanes are in place or planned – There are several existing HOV lanes in the Valley, plus others planned, where transit service on the freeways is between minimal and non-existent, including large sections of I-5, CA101, CA118, CA134, CA170, and I-405 – in other words, every single freeway in the Valley.

Evidently, very few people are aware of California Public Utilities Code (PUC) §130350, which states:

> "A retail transactions and use tax ordinate applicable in the incorporated and unincorporated territory of the County of Los Angeles may be adopted by the Los Angeles County Transportation Commission in accordance with Part I.6. (commencing with Section 7251) of Division 2 of the Revenue and Taxation Code, provided that a majority of the electors voting on the measure vote to authorize its enactment at a special election called for that purpose by the commission."

PUC §130354 states:

> "The revenues received by the Los Angeles County Transportation Commission from the imposition of the transactions and use taxes shall be used for public transit purposes."

The problem that arises is that Proposition C – which LACTC placed on the November 1990 ballot, and was passed by the electorate – includes the allocation of 25% of the Proposition C sales tax collections (net of that allocated for administrative costs) to "transit related highway improvements." These funds have been utilized primarily for HOV lanes – and, under California statues, HOV is *not* recognized as transit.

Moreover, LACTC staff was very well aware of this problem. This can be conclusively demonstrated by legal opinions requested and received by LACTC[21] and the unsuccessful attempt, for over a year, by LACTC to have the County and/or the Cities of Los Angeles County place what eventually became Proposition C on the ballot because there are no such restrictions on the uses of sales tax proceeds for ballot measures sponsored by these types of governmental units. Although LACTC attempted to get around this limitation by adopting its own definition of "transit" in its Ordinance 49 that included HOV lanes (the legal name for what we know as Proposition C), this is not

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[21] See legal opinions of Nossaman, Guthner, Know & Elliot on this subject, specifically letter to Rick Richmond, Executive Director, Los Angeles County Transportation Commission, January 25, 1984 (Bates numbers M 339 077-88 in *Labor/Community Strategy Center v MTA*).

valid under both common sense and a definitive California Appellate decision[22] – a local governmental legislative body cannot pass legislation that "overrides" legislation passed by a "senior" legislative body, in this case, the California Legislature.

If necessary, we can provide all the documentation as the above legal problem, but we suggest that MTA first attempt to see if there are any staff from LACTC and/or County Counsel (which was LACTC counsel before it was MTA counsel) who are familiar with the situation.

In light of this issue, there are two very good reasons for MTA to study adding at least one express route to every single mile of every HOV lane in the Valley that has received Proposition C 25% funding in the new EIR:

1. There appears to be a demonstrated transit need for such lines, and
2. If there is at least one express line operating on each mile of every HOV lane, then MTA is at least not in *total* violation of the requirement that Proposition C funds can only be utilized for transit purposes and the fact that HOV is not a transit purpose. Of course, MTA could still be subject to a challenge on the basis that the amount of transit utilization of the HOV lanes fails to meet even the least stringent *de minimis* test, but at least MTA would have the opportunity to argue what the standard should be.

c. Reduced fares – As has been demonstrated conclusively by both the 1982-1985 "50¢ fare" program and the more recent Consent Decree fare reductions, perhaps the absolute simplest, easiest, quickest, and most economical and effective way to increase transit ridership is simply to lower the fares. In the former, the reduction in the cash fare from 85¢ to 50¢ was evidently virtually the sole cause of the 40% increase in unlinked passenger trips over the three years of the program, the greatest ridership increase of any mature transit system in the U.S. since World War II, by far. More recently, the reduced pass prices and new types of passes in the CD were key components of turning what had been an 11-year trend of losses of 12+ million riders a year into a six-year trend of adding 13+ million riders a year.

And, of course, MTA has always totally refused to even consider reducing fares as a means of increasing transit use. One response by MTA in the past has been that there is no funding being available, but, as we know, this is not question of the availability of funding for a fare reduction/transit use increase program, but rather, it is one of prioritization of spending of funds that could be utilized for this purpose.

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22 *City of El Cajon v. Lonergan* (1978, 83 Cal.App.3d 672).

We suggest that *the* most important single criterion for decisions of transit agencies is ridership, and that a program that has shown to be so incredibly effective in increasing ridership is well worth detailed study.

d. Fair and Consistent Analysis – A fair and consistent analysis is essential, rather than one which favors the MTA favored alternative.

In the first EIR for what became know as the Orange Line, MTA failed to do this. The most significant example, of course, was the failure to even include as an alternative the most logical option, that of a network of Rapid Bus lines, which Second Appellate has ordered MTA to correct.

There are many other examples, however. Turning to the run time projections for the various alternatives, MTA was forced to admit, in the FEIR, that the 28.8 minute end-to-end run time on what is now know as the Orange Line was never possible – as was pointed out, in detail, by members of COST in their comments on the DEIS/DEIR. However, MTA has never "fixed" the equally obvious error in the 50 minute Rapid Bus run time between Warner Center and North Hollywood. While MTA was forced to respond to DEIS/DEIR comments from a COST member that the Rapid Bus time shown was *not* for the Warner Center to North Hollywood trip, but between Warner Center and *Universal City*, a run over a mile longer over a more congested, slower street, with far more traffic signals and a lower speed limit, than the most obvious Rapid Bus connection between Warner Center and North Hollywood, it has never posted the projected Rapid Bus run time between the end points on the Orange Line.

There are a number of errors and inconsistencies in the actual MTA run time calculations. For example, the standard braking rate for such calculations is 3.0 mph/second, but MTA evidently utilizes a higher rate in its calculations for Orange Line run times. This "saves time," but the faster rate of braking is likely to cause major problems with standees that will be thrown around the interior of the buses.

In the calculation of the run time for the "minimum operating segment" alternative, there appear to be several errors and inconsistencies. For example:

1. The top speed of buses operating in "Rapid Bus" mode on Victory West of the "MOS" bus rapid transit segment is limited to 35 mph in MTA's travel time calculation, even though this street is actually posted at 40 mph.
2. Time differences for identical operating assumptions are also apparent. For the MOS, the average intersection delay at stations was nine seconds, vs. eight for the "full BRT" alternative. Meanwhile, the run time for a Rapid Bus is eleven seconds longer than for BRT *on the street running* approach to Warner Center *after excluding any differences due to traffic*

signal stops, where both Rapid Bus and BRT would be operating in exactly the same way. If there is any difference at all, one would expect Rapid Bus to be faster because the BRT buses would be making a right turn and the Rapid Buses would not.

3. Finally, the 60-foot buses that MTA has purchased for use on the Orange Line have significantly lower rates of acceleration than the rates that were utilized in the MTA's run time models.

In the new EIR, we request that MTA use the *correct* data for all alternatives, and make apples-to-apples comparisons. If, for example, MTA proposes to utilize 60-foot CNG artic's on the Orange Line, but standard 40-footer's for Rapid Bus service (which we believe may be preferable for a variety of reasons, including promoting shorter headways on the Rapid Bus lines), then the analysis should show the faster acceleration of Rapid Buses in the run time models. If MTA proposes the use of the same 60-footers for Valley Rapid Bus service as it proposes to use on the Orange Line, the analysis should show: (1) the rationale for this, and (2) the same rates of acceleration and braking. If there are any differences in such other time/speed factors, such as dwell time, signal delays, etc., MTA should provide detailed explanations of why such differences are proper in this comparison.

In Appendix III, we provide several examples of how the run time models utilized by MTA in the first EIR were faulty.

VI. Safety – We have previously commented on the poor safety record of at-grade facilities like the Long Beach Blue Line and the busway operated by Miami-Dade Transit. In the years since adoption of the Draft EIR, a new at-grade light rail line has been completed in Houston, Texas. The safety experience of this facility and interrelated experience with run time and other metrics, is relevant here to any comparison of the MTA busway to alternative projects. The Houston Main Street light rail system has a train-vs.-car collision approximately every four days since opening, and operates using the same type of "trains-in-the-middle-of-the-street-through-grade-crossings that are incumbent in much of the Orange Line alignment.

This is much more than "merely" a safety issue (although we are not aware of any criterion that should be given more significance than safety). It is also a travel time issue. In Miami, the safety problem forced buses to stop at every crossing, green light or not, and thereby reduced the speed of busway buses to that of the former route on an arterial street/highway (approximately 20 mph). In Houston, the response to the incredibly high rate of train-vs.-auto collisions was to change the traffic signals to require red lights in all directions for a minimum of fifteen seconds prior to a train being allowed to enter the intersection. (It is too early to have enough data to see what the impact of this traffic signaling change is, but the first returns appear to show it reducing the collision rate – perhaps by about half.) We have not yet modeled what such a 15-second rule would do to surface

transportation in the San Fernando Valley, but it is probably safe to project that the results would not be good. We believe that because of the similarities between the busway and the Houston and Miami facilities, it is essential to incorporate the potential for such remedial measures into any analysis of projected run time.

In this vein, we also point out that the impact of the recent opening of the Hiawatha light rail line in the Twin Cities on cross traffic has not been entirely positive. In the days immediately following the opening, delays of up to fifteen minutes for traffic crossing the light rail line, and the arterial that it runs next to, were not uncommon, even with headways far longer than what MTA is proposing for the Orange Line. More recent information is that such delays are now rarely longer than six minutes – which we believe most Valley residents would not find acceptable. We believe that the experience of this light rail line should also be taken into consideration in performing run time comparisons between the busway and the new Rapid Bus alternative.

VII. MTA's Transportation Planning Model – As you know, in the comments on the DEIR, the MTA transportation planning model was shown to have a 22% error rate for a particular, and important, comparison. In another comment, the City of Los Angeles Department of Transportation showed that the transit ridership projected by the MTA model differed from that projected by that of the Southern California Association of Governments by 22% (the identical error rates appear to be coincidental). Because the nature of CEQA challenges makes it extremely difficult to introduce new information, it was not possible for COST to show that, after studying MTA's various attempts to show that the error rate was *not* 22%, but that the actual error rate, using MTA's own data (although in a proper and consistent manner), was 24%.

We strongly suggest that efforts be made to properly calibrate the MTA's transportation planning model prior to *any* attempts to utilize it for any work associated with the new EIR process – or for any other purpose, for that matter.

There is an additional troubling aspect of MTA's transportation planning model, one that it shares with almost all such models: there is no feedback loop that corrects for human reactions to changed travel conditions.

As travel conditions change, chiefly due to the additional trips on a road network that is not growing apace with projected demand, speed of travel slows. In the real world, people make adjustments to their travel patterns when their personal "upset" points are reached. For home-to-work trips (which is about the only thing that such models can project with much confidence because they are the vast majority of the consistently taken trips), travelers use different routes to get to work, they start work earlier or work later, they move to locations closer to their jobs, they take jobs closer to their home, their employer moves to the suburbs to be closer to the available work force, etc.

However, in the current state-of-the-art in transportation modeling, including MTA's modeling process, the basic assumption is that people will not change their travel patterns, no matter how bad the travel conditions get. As a result, such models are extremely capable of producing "doomsday" travel condition projections in the later, or "out" years of transportation plans.

In particular, this type of problem can significantly distort the comparative analysis of alternatives. If there is no cognizance taken of how people change their travel patterns as travel conditions change, such models often project more road travel – chiefly through longer trips – than will actually occur.

One of MTA's chief arguments for the Orange Line is that, no matter how bad travel gets on the streets, the Orange Line travel time will remain constant because it is operating on a fixed guideway[23]. If MTA's transportation model is projecting more road usage than will actually exist in the "out" years, this will tend to show more slowdowns in surface street and surface street transit bus travel more than will actually occur.

Trying to correct this structural deficiency in current transportation modeling practice is far beyond what could be possibly be done for this EIR process, and we do not suggest that any attempt to do so be made[24].

We do, however, have a suggestion as to how the impact of such overestimation of travel may be identified and even, to some extent, quantified. It has long been known that urban average home-to-work travel times remain extremely constant over time, even as travel conditions change. We suggest that the MTA transportation planning model runs for the current day and for the "out" year in the EIR show home-to-work travel time. If the values are relatively constant, then it is likely that there is little or no impact on the analysis of alternatives from this concern. However, if there are major increases, there is reason to believe that traffic congestion is being significantly overstated in the future year and travel slowdowns for non-Orange Line alternatives are overstated. [25]

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[23] Even in the absence of the transportation modeling problems discussed above, this proposition is questionable. If North-South travel increases significantly, the ability of Orange Line buses to continue to receive traffic signal timing and signal preference for "greens" will almost certainly be impacted.

[24] One promising alternative would be to explore the utilization of "discrete choice" models, such as that developed by Daniel McFadden, the 2000 Nobel Laureate in Economics, in his remarkably accurate projection of initial BART work trip travel modal share.

In the meantime, the operation of existing "gravity" models to produce results dictated by the data and the logical analysis thereof, rather than to achieve a pre-selected outcome, would be a most significant first step.

[25] Another promising alternative would be to explore the utilization of "discrete choice" models, such as that developed by Daniel McFadden, the 2000 Nobel Laureate in Economics, in his remarkably accurate projection of initial BART work trip travel modal share.

In the mean time, the operation of existing "gravity" models to produce results dictated by the data and the logical analysis thereof, rather than to achieve a pre-selected outcome, would be a most significant first step.

VIII. Other Legal Issues – There are at least three other significant legal issues that constitute new information and/or changed circumstances that should be evaluated in the new EIR:

a. Orange Line Stations at Fulton/Burbank and Coldwater Canyon are in violation of State Statute – During the 1980's and early 1990's, then-State Senator Alan Robbins of North Hollywood was able to introduce and get enacted several provisions to protect the interests of SFV residents in transit matters. One of the provisions he authored, codified as Public Utilities Code §130265, prohibited (what is now) MTA from building any type of transit except a subway along part of the former Southern Pacific "Burbank Branch" and placed other restrictions on rail line construction. The following are the three most relevant subsections:

"(a) In the area between the western curb of Hazeltine Avenue and a line parallel to and 50 feet west of the western edge of the Hollywood freeway, there may not be constructed any exclusive public mass transit **rail** *(emphasis added to indicate the addition of this word late in the 2001 Legislative session)* guideway, rail rapid transit or light rail system, or other track, other than as a subway system that is covered and below grade.

"(b) In the area described in subdivision (c), no station may be constructed, other than a station where the main entrance is located on property that is currently part of the Los Angeles Valley College campus or on that portion of the existing railroad right-of-way located north of Burbank Boulevard and east of Fulton Avenue.

"(c) In the area below Tujunga Wash and at least one mile to the east and west of Tujunga Wash, there may not be constructed any exclusive public mass transit rail guideway, rail rapid transit or light rail system, or other track, other than as a subway using boring technology as a deep bore subway located at least 25 feet below ground, measured from the existing ground level to the top of the tunnel."

Opponents of surface transit guideways thought that subsection (a) would be their strongest protection. However, MTA was able to get the word, "rail," added, in subsection (a), as shown above, making the controls on surface transit therein contained relevant only to rail transit – and exempting busways. This change was made very quietly in the last days of the Assembly session, with virtually no advance notice, and passed without opposition in the rush to adjournment.

However, MTA failed to have any changes made to subsections (b) or (c). (b) clearly requires any station at the intersection of Burbank/Fulton – *regardless of the mode of transit guideway utilized* – to be on the Northeast corner, while MTA has designed the two busway station platforms to be on the Northwest and Southeast corners.

In addition, the boundaries set in subsection (c), taken in context with (b), prohibit the placement of the station planned at Coldwater Canyon – both the East- and Westbound boarding areas, located West and East of Coldwater, respectively, are within one mile of the Tujunga Wash.

Although subsection (a) was changed, MTA is undoubtedly aware that similar changes were *not* made to subsections (b) and (c), and there is a distinct potential that these laws will be enforced, whether by way of litigation or otherwise, to exclude the aforementioned busway stations.

b. Bus Weight – In the time/speed/distance tables in North American Bus Industries' proposal to MTA[26] for the 60-foot CNG artic's that MTA proposes to utilize on the Orange Line, we note that the total vehicle wait for the "service load" test is shown as 63,050 pounds. This calculation is normally done with buses topped off with liquids, a driver on board, all seats occupied, and three standees per square meter of standing space, and an assumption that all humans weight 75 kilograms.

However, California Vehicle Code Section 35554 states: "Notwithstanding Section 35550, the gross weight on any one axle of a bus shall not exceed 20,500 pounds." Even if the weight of this bus was evenly spread over all three axles – which is virtually never the case, particularly with buses – this bus would still be in violation of VC35554, with an average weight of 21,016 pounds per axle. In the real world, a loaded bus will exceed this statutory axle weight limit by thousands of pounds on the most heavily weighted axle.[27] The purpose of this axle weight limit is manifestly to prevent excessive wear and tear on the California roads. [28]

In sum, it appears that this bus, with a service load, will likely be far over the legal maximums for street use in California.[29]

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[26] There was no ability to comment on this issue prior to the finalization of the EIR because the decision to procure these buses was made long after the FEIR was adopted by the MTA Board in February 2002 – see MTA press release, "MTA Moves Forward with the Purchase of 200 High-capacity Buses and a Major Design/Build Contract for the San Fernando Valley Metro Rapid Transitway," April 3, 2003, http://www.mta.net/press/2003/04_April/mta_046.htm.

[27] Unlike the "load factor" requirements of the Consent Decree that settled *Labor/Community Strategy Center v MTA*, the axle weight requirement is not applied to an average of buses over a period or 20 minutes or an hour, but is applied to each bus each and every minute it is on a public road.

[28] MTA is evidently well aware of, this factor judging by the staff proposal to the MTA Board on July 22, 2004, Agenda item number 29 – "Issue Change Orders in an Amount Not-to-Exceed $2,000,000 for Design and Construction to Upgrade the Busway Pavement Structural Section."

[29] While MTA will be the owner of the actual Orange Line busway and we are aware of any legal issue with MTA operating overweight vehicles on its own property, these buses will be crossing dozens of public road streets on their Orange Line end-to-end trips and will be operating on the streets at the extreme Western end of the line approaching Warner Center.

MTA should perform weight tests with a certified axle scale to determine the maximum load that will allow this bus to be legally operated and adjust the Orange Line operating plan and costs accordingly.

APPENDIX I
EVALUATION OF REQUIREMENTS FOR CHANGE BY CHAPTER

Chapter/Title	Evaluation of Degree of Changes Required
Summary	Refer to specific chapters below for required modifications in Summary
1 Purpose and Need	The Study Area is clearly defined as the entire San Fernando Valley, but the vast majority of the discussion of improvements focuses solely on the Orange Line and North-South feeder service to the Orange Line. There needs to a discussion of the role of both guideway and non-guideway transit and their relationships to transit needs in the *entire* Valley.
2 Alternatives Considered	Again, there needs to be a shift from almost exclusive focus on guideway transit to a discussion of the total transit needs for the entire Valley, not just a narrow slice thereof. Rapid bus is one obvious alternative to be added, but other transit improvement features, including timed-transfer operations, additional express bus service, and fare reductions, as methods to increase transit use, need to be introduced and discussed.
3 Transportation Setting, Impacts, and Mitigation	The focus needs to better describe transit travel, existing and potential, in the Valley. The obvious greatest potential for increase in transit usage is from current transit users and those Valley residents, workers, and visitors with characteristics most similar to existing transit users. The difficulties of transfers in the Valley due to long headways, and options to improve transit options, need more discussion. Route-by-route ridership for MTA and other transit service operators' routes, along with route length, headway, hours/miles of revenue service, hours of operation, and other information should be provided. Major transfer points should be identified with volume, directions, and time information. The study area is the entire Valley, not just a narrow slice in the Southern portion of the flatland.
4 Affected Environment and Environmental Consequences	Once again, the focus must shift from a narrow band in the Southern portion of the flatland to the entire Valley. Since we have new alternatives, all individual environmental impacts need to be studied and results reported and compared. For the non-Orange Line-only alternatives, the positive financial impact to MTA (and the property tax base) from the conversion of the former Burbank Branch property to other use and the proceeds from the sale(s) or lease(s) of such land should be disclosed. At a minimum, there should be a discussion of the lease income forgone by MTA when the 109 Burbank Branch leases were terminated (discussion to be placed either here and/or Chapter 6). The study of air quality needs to be tailored to the impact of improved local bus transit in reducing not just automobile trips,

	but automobile trips by the lowest income residents, who drive cars that can be 100 or even 1,000 times "dirtier" than cars driven by higher-income "choice" riders.
5 Construction Impact	Obviously, the non-Orange Line alternatives will have no impacts from construction of the Orange Line guideway et al, but could have increased impacts in some particulars if an additional bus operating yard needs to be constructed, or if existing bus yards need to be expanded. The relatively minor construction work to add Rapid Bus lines (bus stops, loops in the roadway, etc.) and other improvements, such as timed transfer centers, must be analyzed for these alternatives.
6 Purpose and Need and Financial Comparison of Alternatives	This chapter will be almost entirely new. There are numerous changes to the costs originally presented in the old EIR due to events that have occurred since the "cut off" time for its publication. Various costs bearing on the Orange Line not comprehended in the old EIR must be included, such as the cost of the Red Line North Hollywood Station portal on the West side of Lankershim, the "Boeing" park-and-ride lot (and its operating costs), and repayment, with interest, of the funds improperly taken from the Proposition 108 Rail Passenger Bond and not utilized for rail purposes. The metrics for comparison of alternatives will also be significantly changed (see discussion at III., above.).

APPENDIX II
PROBLEMS WITH MTA PROCEDURE FOR SELECTION OF NEW RAPID BUS LINES

In turning to the current MTA plan for Rapid Bus[30] – adopted by the MTA Board on the same day that it adopted the SFV BRT – it is notable that MTA does not propose one additional East-West Valley arterial for Rapid Bus. Since both the East-West arterial streets and the East-West bus routes are generally far longer than the North-South ones, sometimes well over twice as long, this appears unusual, because the longer the trip a passenger is taking, the greater the time savings by using Rapid Bus. Rapid Bus on Roscoe *was* included in the previous MTA Rapid Bus preliminary plans, but was dropped by the most recent adopted list (except as a component of the "Reseda" Rapid Bus line between Reseda and Supulveda, a distance of approximately four miles).

Why are no Valley East-West arterial streets or bus lines proposed for Rapid Bus?

Going to the details of the MTA staff report on "Metro Rapid Expansion Program," on pp. 1-2 of "Metro Rapid Expansion Program," under "2 Selection Process" – "Identify Potential Candidate Lines," the following process statement of process appears:

> "The LRTP (TAR: Long Range Transportation Plan) Metro Rapid conceptual plan evaluated all MTA lines with over 10,000 weekday boardings based on the idea that a critical threshold of ridership would be required to justify and support both Metro Rapid and local service on a given corridor. This resulted in a shortlist of 41 line corridors and was considered sufficient at that time. However, since then there has been a desire on the part of both MTA and Municipal Operators to consider "Muni" line corridors as possible Metro Rapid candidates based on the premise that certain corridors had the necessary characteristics to support Metro Rapid service and provided necessary network linkages.
>
> "Initially, a lower ridership level of 5,000 weekday unlinked passenger boardings was considered the threshold for Metro Rapid consideration, recognizing that most Muni lines were shorter than MTA lines. However, working sessions with MTA Planning and Operations staff suggested using a new threshold based on unlinked weekday passenger boardings per mile of route in order to factor out the effect of the overall route length. The candidate selection was modified to reflect this approach.
>
> "Minimum thresholds for Phase II were established at 500 weekday passenger boardings per mile of route with a minimum route length of 10 miles in order to ensure that the necessary ridership levels and opportunities for significant travel time savings were met. A secondary consideration, for possible inclusion, was given to routes with boardings per route mile of 400 to 500 as noted in Exhibit 1. Thirty-six candidate lines were selected for evaluation in the end."

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30 *Metro Rapid Expansion Plan*, MTA Board Meeting, February 28, 2002, item 31.

This is a curious approach, for several reasons:

1. Generally, speaking, the longer the route, the higher the ridership. One would think that offering the benefits of Rapid Bus to the greatest number of riders would be one consideration in making decisions for deployment of Rapid Bus.

2. Generally speaking, the longer the route, the longer the average passenger trip length. Obviously, the longer the trip length, the greater the benefit from speed improvements of a given percentage. For example, if we assume that a bus now has an average speed of 12 mph, and that Rapid Bus will offer a 25% speed increase (approximating the speeds for current MTA local and Rapid Bus lines), then the Rapid Bus average speed will be 15 mph. For a passenger traveling two miles (approximately half the average MTA bus unlinked trip length), the time of travel is decreased from ten minutes to eight minutes, a savings of two minutes. For a passenger traveling eight miles (approximately double the average MTA bus unlinked trip length), the time of travel is decreased from forty minutes to 32 minutes, a savings of eight minutes. Obviously, the time savings of Rapid Bus is far more important for a passenger taking longer trips than shorter ones.

   One would think that an obvious criterion for Rapid Transit route selection should be the actual benefit that individual travelers would receive. For a passenger making a two-mile trip, the extra wait for a Rapid Bus would not likely be worthwhile if a "regular" local came along first, particularly if the "regular" bus has stops near to the transit trip origins and destinations. For someone taking a longer trips, say on Wilshire, waiting an extra two or three minutes for a Rapid Bus would certainly be the right decision – especially if there are real-time, dependable "next bus will arrive in ## minutes" signs.

3. Not considering average trip lengths has two impacts. First, it ignores the point made above, that Rapid Bus time savings is more important to passengers taking longer trips. The second effect is even worse. Lines with longer average trip lengths tend to have fewer boardings. MTA schedules bus trips primarily on the basis of peak loads. If people take longer trips, they stay on the bus longer and, therefore, all else equal, there are fewer boardings on bus lines with longer average trip lengths.

   Therefore, for two buses with similar peak loads, the line that has the longer average trip length will almost always have fewer boardings per hour. Therefore, not only does not considering average trip length ignore the greater benefits to passengers who take longer trips, but, in fact, the boardings per hour rule that MTA established actually actively works *against* routes with passengers who take longer trips being considered for Rapid Bus treatment.

   The obvious necessary change is to discard the boardings per mile criterion and to substitute for it a combination of average passenger load (passenger miles/revenue vehicle miles) and average trip length.

4. Almost all of the Rapid Bus lines adopted by MTA are relatively close to straight line routes, some with minor bends. There are almost no lines with right angle bends, where,

> for example, where a bus could start heading North on a North-South Rapid Bus line, then turn East on to an East-West Rapid Bus alignment to deliver people to a major job center, such as downtown, during rush hour, with a reversed pattern in the afternoon rush.

In this regard, please refer to Exhibit 1, MTA's Rapid Bus candidate listing. Checking it for the SFV bus lines listed above, there are four listed, out of the total of 55:

1. Line 94 – San Fernando Road

2. Line 150 – Conoga Park/Warner Center/Ventura Boulevard/Universal City – The vast majority of this line (all but approximately 3.5 miles) is on Ventura Boulevard, which already has Rapid Bus – Line 750

3. Line 156 – Panorama City/Van Nuys/North Hollywood/Hollywood/LA City College

4. Line 561 – Sylmar/San Fernando Metrolink Station/Van Nuys Boulevard Limited/Getty Center Museum/UCLA/LAX City Bus Center/Aviation Metro Rail Station Express (Lines 156 and 561 both run on Van Nuys, although 156 stops at Roscoe in the North. Once the 561 leaves Van Nuys in the South, it operates primarily on Freeways, where Rapid Bus isn't applicable.)

Therefore, there were only two streets that did not already have Rapid Bus evaluated in the Valley, San Fernando Road, near the extreme Northeast of the Valley, and Van Nuys, a North-South route pretty much in the middle of the Valley.

This raises a question: What happened to the all the other lines in the list above? Did not a single one of them reach the former 10,000 daily boardings standard, or the new 500 riders per line mile standard?

This appears doubtful, given analysis in the original EIR for the busway project (FEIR, page II-10):

> "In the east-west direction, the heaviest bus ridership occurs along Vanowen Street, Victory Boulevard, and Ventura Boulevard. North-south, the heaviest ridership occurs along the southern segment of Topanga Canyon Boulevard and Van Nuys Boulevard. Bus ridership along each of these arterials totals more than 10,000 passengers each day. The east-west corridor has a daily bus ridership in the range of 40,000-50,000 passengers[31]."

Excluding Ventura, which already has Rapid Bus, there are obviously four lines that pass the old 10,000 boardings/day test – Van Owen, Victory, Topanga Canyon, and Van Nuys – from MTA's own FEIR for the Orange Line. Van Nuys did make the MTA "Possible Candidate Lines" list,

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31 FEIR, Volume 1, 1-1.2.3 Public Transportation, page 1-10.

but the other three should have been considered unless they failed 500 boardings/mile test or the lowered 400 boardings/mile test.

The segment of Topanga Canyon Boulevard where transit operates is approximately nine miles, and the total line length is approximately thirteen miles[32]. Therefore, even if one assumes the minimum, 10,000 boardings, that is still approximately 750-800 boardings per route mile (more on Topanga itself), which would appear to place it just under the middle of all of the 55 transit streets on the MTA candidate list. However, this line isn't on the list. It is not certain why.

Perhaps MTA didn't place this line on the list because the portion of the route on Topanga Canyon is only nine miles and thus failed the ten mile test. However, if this was the reason, then certainly Rapid Bus on Ventura Boulevard, which actually runs on Topanga Canyon at its Western end, could be joined up with Rapid Bus on Topanga. The ridership is definitely there, and would allow this heavily utilized transit street to be used for Rapid Bus. Moreover, the Topanga–Ventura Connection is a heavily utilized one for transfers, making this an even more obvious linking. Indeed, MTA route 150, the Ventura Boulevard "local" line, *does* operate on Topanga Canyon North to Wyandotte Street, North of Sherman Way.

Indeed, it appears as though the rules – including the ten mile rule, if that is what caused Topanga Canyon to be rejected from consideration for Rapid Bus – appear to be somewhat flexible.

Returning to Victory and Van Owen, both appear to be just less than twenty miles in length. This would produce boardings/mile above the 500 cutoff, and well above the 400 cutoff, even if we assume that ridership is the absolute minimum 10,000.

Yet, none of these were even placed on the Exhibit 1 – Potential Candidate Lines list.

For Victory, it may be that it was disqualified because the Burbank-Chandler BRT alignment runs fairly close to it for all of its length and literally right next to it for approximately four to five miles.

There is certainly no such policy stated in the MTA Board report on Rapid Bus. One of the first two Rapid Bus lines, Line 720 on Wilshire/Whittier, runs quite literally "right on top" of the Red Line, or within a block of it, from Western Avenue to downtown Los Angeles. One of the next six streets scheduled for Rapid Bus is Vermont Avenue, where the Red Line runs from Wilshire to Hollywood. Line 60 – Long Beach Avenue – scheduled in the second phase to be implemented, largely parallels the Blue Line for its entire length.

In any event, regardless of why Victory and Van Owen did not even make the preliminary list for evaluation in MTA's procedure two years ago, those reasons do not appear to have any validity

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[32] There are several different bus lines that operate on all or part of Topanga Canyon and some routings may have changed during the time period of and since this analysis. The current lines that operate on Topanga are MTA lines 150, 166, 168, 245, 426, and 750; Antelope Valley line 787; LA-DOT Commuter Express lines 422 and 575; Santa Clarita line 791, and Simi Valley line C.

now – Rapid Bus *should* be evaluated for these and other SFV arterials as part of this new EIR process[33].

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[33] In his declaration of August 9, 2004 in opposition to COST's petition for Writ of Supersedeas or Other Appropriate Stay Order and Request for Immediate Temporary Stay Order, and Requires for Immediate Temporary Stay before Second Appellate Division Seven, Rex Gephart, MTA Director of Regional Transit Planning and its primary proponent of Rapid Bus, states, at ¶ 3.,"Under my direction, MTA has conducted a study to determine the appropriate streets to deploy Rapid Bus throughout the County of Los Angeles ("County"). In February 2002, I generated a report of the study, which is entitled, "Metro Rapid Expansion Program" and was attached to the February 21, 2002 board report that I prepared. A copy of the board report and the Metro Rapid Expansion Program report are collectively attached hereto as Exhibit 'J.'" (Not enclosed to this document as it is readily available to MTA personnel.)

In his ¶ 5., he states, "As part of the study, MTA developed a testing protocol consisting of two thresholds that each candidate route was analyzed by. The testing protocol consisting of two thresholds that each candidate route was 10 miles long and had at least 500 patron boardings per mile. (Exhibit J, Attachment A, p. 2.) The threshold of routes 10 miles long was chosen because any route less than 10 miles could not achieve any noticeable significant speed improvement to the patrons. (See Id.) I consulted with FTA, the City of Los Angeles Department of Transportation and several transportation consultants–Suisman Urban Design and Transportation Management and Design. All of us agreed to define a "noticeable significant speed improvement" as a 20% travel time savings. We further agreed that such a time savings would likely attract a significant number of new riders by having faster service and creating more bus trips with the same operating period as standard bus service. Both of these benefits would justify the expense of Rapid Bus. This prediction was verified by the Rapid Bus demonstration lines on Ventura Blvd. and Wilshire Blvd."

COST members closely followed the progress of the Rapid Bus study described by Mr. Gephart in detail when it was undersway. It was, and is, our belief that the metrics utilized for determination of lines to be considered and to be operated as Rapid Bus routes were and are seriously flawed, as discussed above. What is at issue here, however, how the decision was made to *not* include several San Fernando Valley bus lines. Specifically, it appears that a key criterion set forth in Mr. Gephart's ¶ 5. is nowhere to be found in the board report not the Metro Rapid Expansion report ("Report") and that the actual methodology utilized by MTA to select the lines to be considered for implementation as Rapid Bus lines did not follow the protocol in the Report.

In his ¶ 5., Mr. Gephart discusses the "20% travel time savings" and how it was utilized as a selection criterion. While the board report and the Metro Rapid Expansion Program report in his Exhibit "J" discuss and document the selection methodology in great detail, nowhere is there any mention of any "20% travel time savings" or any criterion remotely close to such, on any of their 24 pages, nor is there any indication in any the of many exhibits of the use of such a criterion.

We find it absolutely inconceivable that any competent technical report of this type would totally omit, absolutely totally fail to have the least sliver of evidence, to support such an important element of the selection methodology.

It is also interesting to note that several of the lines recommended in the Metro Rapid Expansion Program have significant sections outside of the City of the Los Angeles, which, at the time the report was prepared, was the only political jurisdiction that had implemented the traffic signal preferences that are such an important part of the speed advantages of Rapid Bus as it has been implemented in Los Angeles. Yet, there is no discussion of traffic signal preference, or the difficulty or risk of being able to attain it, anywhere in this report. This would appear to have very significant potential impact on the travel time saving potention of these lines.

In his ¶ 9., Mr. Gephart states, "The problem with Rapid Bus running on existing streets with other traffic is that Rapid Bus performance suffers as a result of congestion. This observation was noted in the Final Report Metro Rapid Demonstration Program. (53 AR 12750.) Congestion along Devonshire St., Roscoe Blvd., Sherman Way, Vanowen St., Victory Blvd., Oxnard St., Burbank Blvd and Chandler Blvd. would prevent Rapid Bus from achieving the 20% travel time savings goal."

This observation is fascinating to long-time Los Angeles residents, who will be pleased to know that congestion that could impair Rapid Bus lines from achieving 20% travel time savings goals evidently does not exist on Wilshire Blvd. and Ventura Blvd., the first two Rapid Bus lines, nor will it ever exist on South Broadway, Vermont, Pico/Venice, Florence, Soto, Van Nuys, Central, Santa Monica, Hawthorne, Long Beach, Hollywood/Fairfax, Western, Beverly, Vernon/LaCienega, Atlantic, San Fernando, South Sepulveda, West

(Continued)

Also, it appears that there are other Valley bus lines that would pass the 10,000 boardings and/or 500/400 boardings per route mile tests. MTA does not currently release information on boardings by route, primarily because MTA stopped collecting this and other vital data some years ago. For decades, MTA and its predecessor, the Southern California Rapid Transit District, had produced the *Quarterly Line Performance Trends Report*, which had incredibly detailed data, presented in a time line over a decade or more, for every MTA family of lines.

The last *Line Performance Trends Report* was distributed February 25, 1998, and the last data was collected in December 1997, so this does not have current information, and ridership patterns, of course, change over time.

However, in reviewing the data, we find at lest two other Valley East-West bus routes that appear to meet one or both of the above tests:

1. Line 152, Fallbrook/Roscoe/Vineland/Alameda, showed 10,605 boardings when studied on Monday, October 21, 1996. At the time of the ridecheck that produced this boarding count, this line was about 25 miles long, which would put the boardings/mile at approximately 425, under the 500, but over the 400, cutoff points. On the heavier utilized portions of the route – which probably means excluding most of Fallbrook and Alameda – the ridership per mile is almost certainly well in excess of the 400 boardings per revenue mile minimum.

2. Line 163, Sherman Way/Hollywood Way/Hollywood, showed 10,198 boardings when studied on Thursday, February 20, 1997. This line is approximately 27 miles, which puts it just under the 400 lower limit. However, on the more heavily utilized portions of the line, particularly along Sherman Way, it almost certainly would be well above the 400 passenger/mile minimum.

Finally, Line 180 – Hollywood/Glendale/Pasadena/Altadena/North Lake Avenue via Colorado Boulevard – which is partially in the Valley, appears to also have the ridership to be considered for Rapid Bus status.

Olympic, Garvey-Chavez, Manchester, Crenshaw/Rossmore, Torrance/Long Beach, or Lincoln, the lines recommended for Rapid Bus service in the report (See Table A, "Proposed Metro Rapid Corridor Phasing").

In his ¶ 10., he states, "Not considering congestion, to achieve a Rapid Bus goal of 20% travel time savings, traffic signal priority must be at least 50/50. This means that a vehicle approaching the intersection will have a 50% chance of getting a green light when traveling in the east-west direction verses traveling in the north-south direction. ... I determined the signal priority limit of 50/50 by experience with the existing nine Rapid Bus Routes in the County."

Again, there is absolutely no mention what-so-ever about any "50/50" rule in the "Metro Rapid Expansion Report." The interesting question that this raises is, how did Mr. Gephart determine the 50/50 rule, required to provide the 20% travel time savings, when seven of the nine "existing Rapid Bus Routes in the County" did not exist until *after they were implemented as recommended in the "Metro Rapid Expansion Program" report?*

There appears to be reason to question exactly when the "20% travel time savings" and the "50/50" rules first appeared – and no reason at all to believe that they existed when the "Metro Rapid Expansion Program" report was prepared and the decision to not consider any San Fernando Valley East-West bus lines for Rapid Bus service was made.

It is unfortunate that we do not have more current ridership data available from MTA. What we do know is that overall bus ridership has increased significantly from 1996 and 1997 to the current day, so it is not at all unreasonable to believe that one or both of these lines, and perhaps others, exceeded the 400 boardings per mile test, at least on the East-West portions of their travel.

To say the least, there appears to be a bit of conflict between the methodology that MTA staff states is utilized in the report to the MTA Board, and the methodology that is actually utilized. Evidently not all the lines that met the test for qualifying for consideration were considered.

EXHIBIT V

WARNER CENTER ORANGE LINE AND RAPID BUS ROUTE ALIGNMENTS

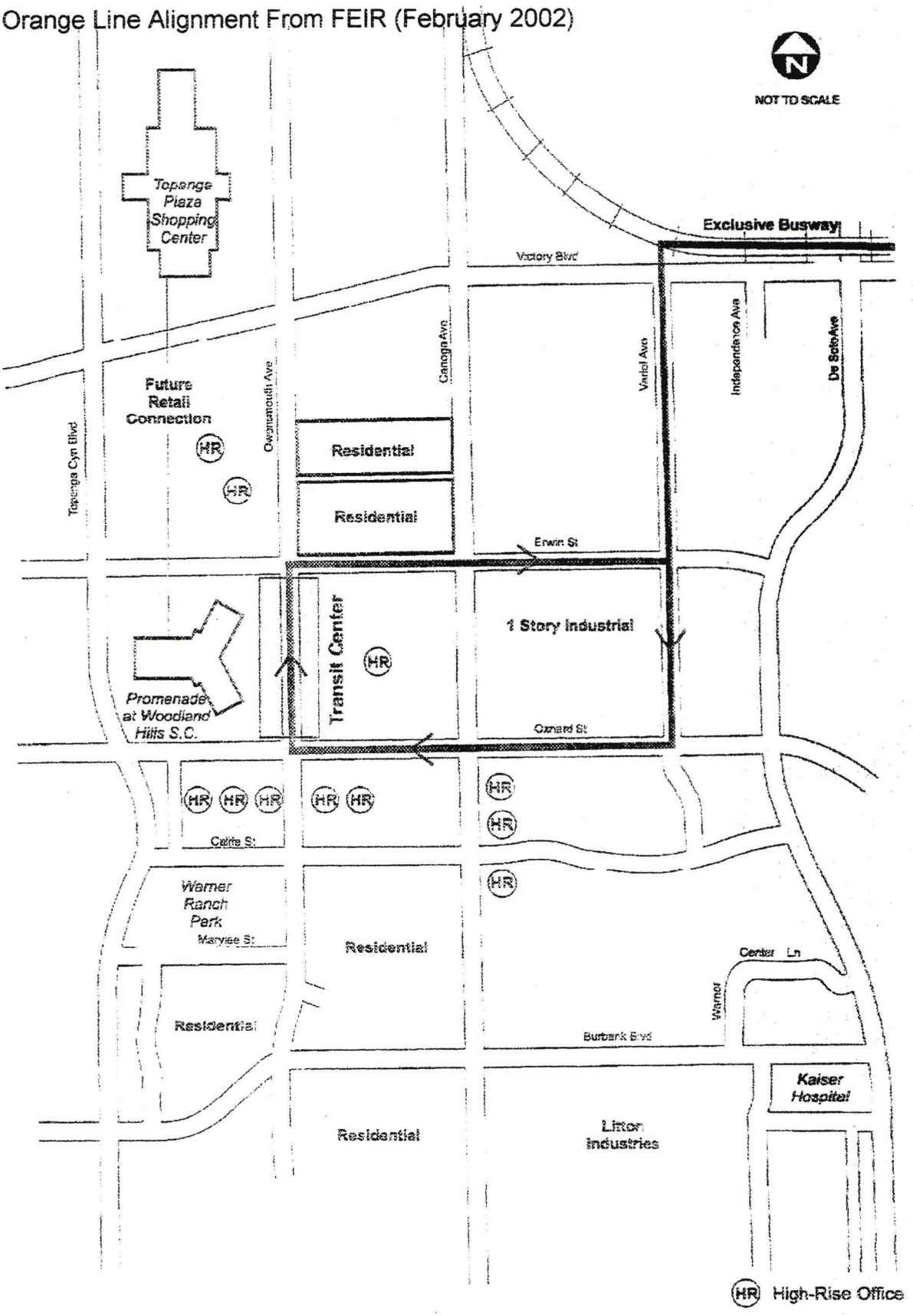

Figure 2-26: Warner Center Transit Hub Design Concept

Source: Meyer Mohaddes Associates, 2001.

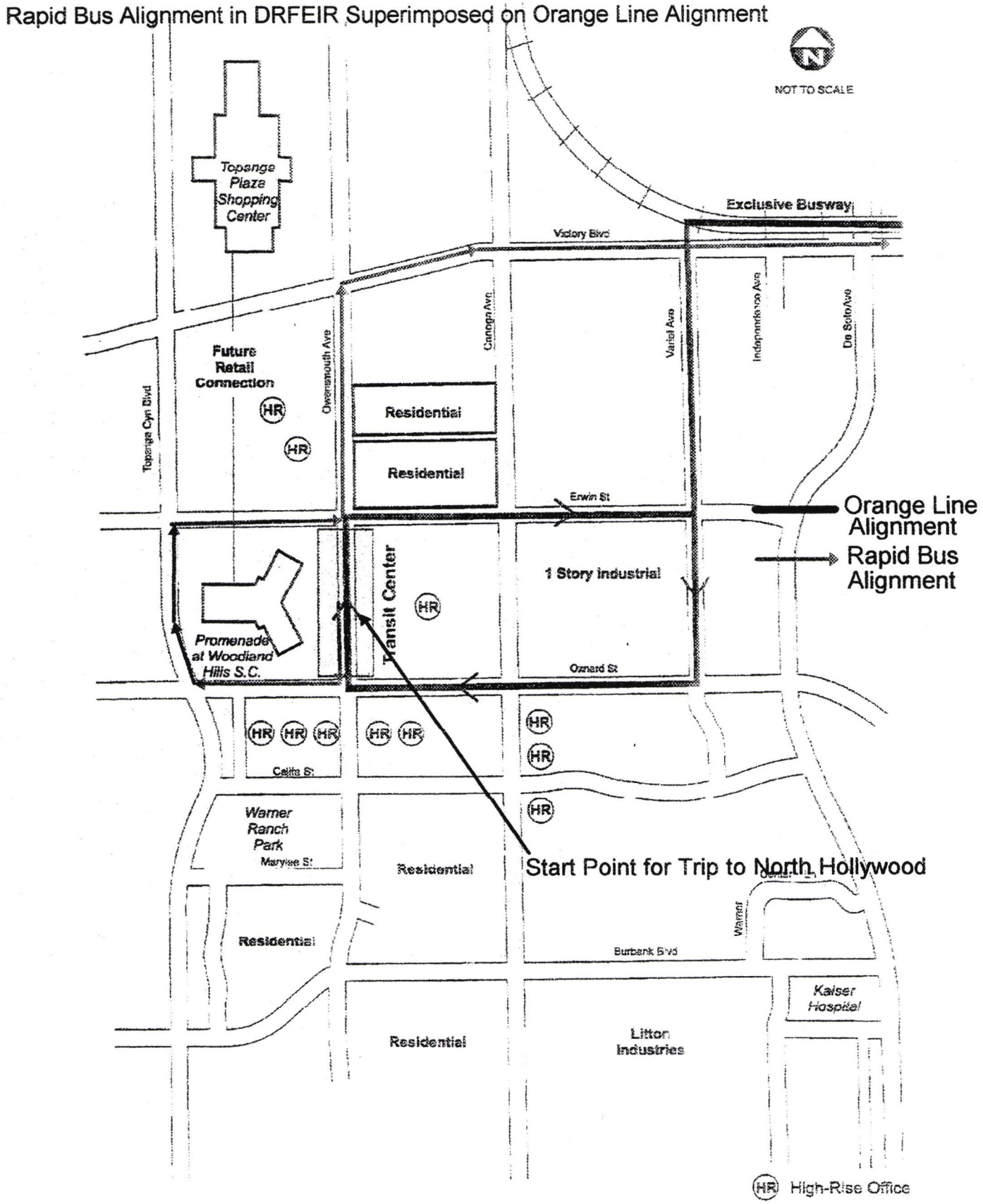

Figure 2-26: Warner Center Transit Hub Design Concept

ource: Meyer Mohaddes Associates, 2001.

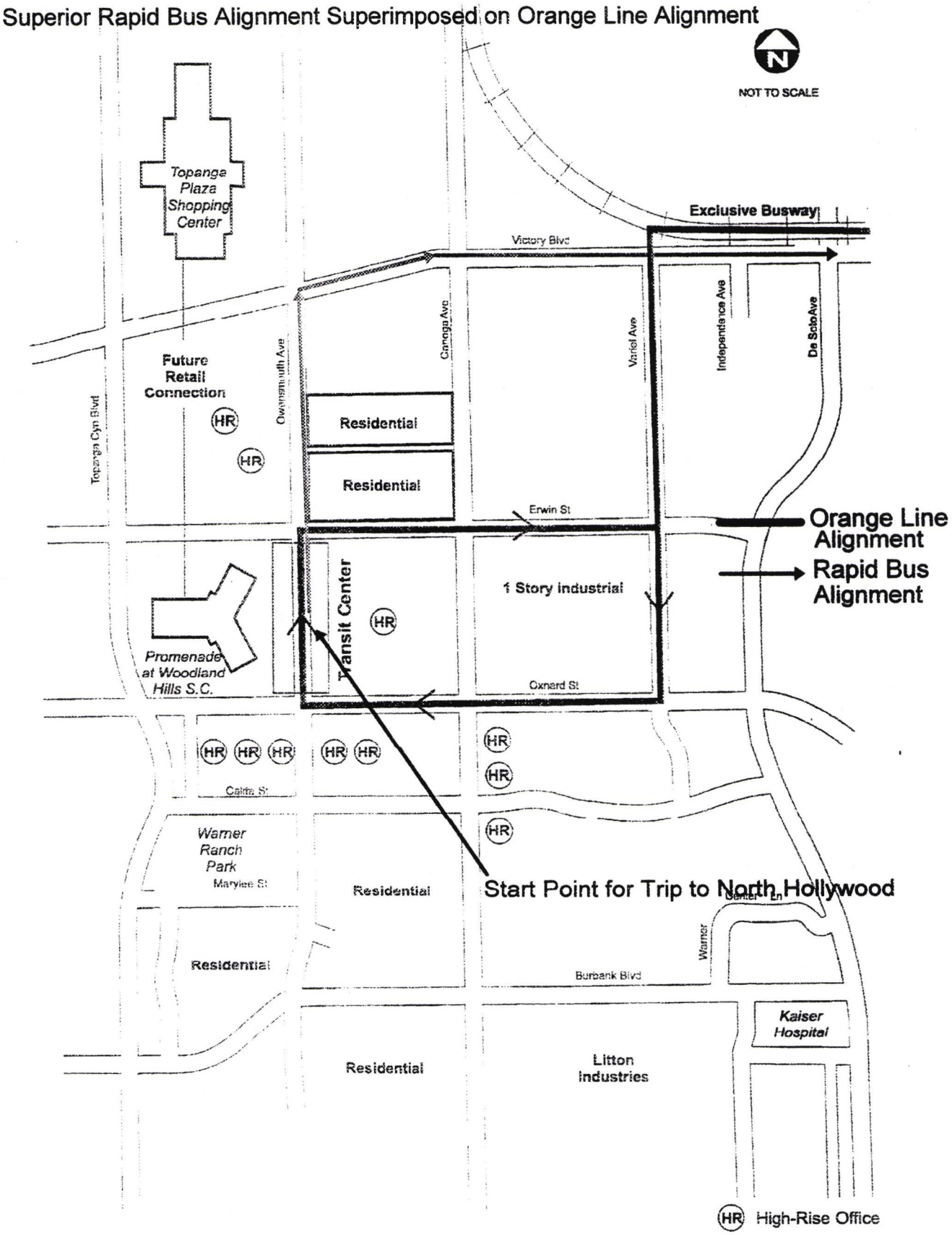

Figure 2-26: Warner Center Transit Hub Design Concept

Source: Meyer Mohaddes Associates, 2001.

EXHIBIT VI

MTA PRESS RELEASES

Metro News

May 14, 2001
CONTACT: Ed Scannell/Marc Littman
MTA MEDIA RELATIONS
(213) 922-2702/922-2700
www.mta.net/press/pressroom
e-mail: mediarelations@mta.net
FOR IMMEDIATE RELEASE

MTA Releases Draft Environmental Report on Proposed San Fernando Valley East-West Busway

- **Busway would Speed East-West Travel**

Schedule and locations for public hearings

Versión en español

(Los Angeles) -- The MTA has released a draft environmental study of a proposed 14-mile Bus Rapid Transit (BRT) system, also called a "busway," which would speed the travel of thousands of commuters between the Warner Center Transit Hub in the west San Fernando Valley and the Metro Red Line subway station in North Hollywood.

Release of the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the San Fernando Valley East-West Transit Corridor Project signals the beginning of a 45-day comment period which will include a series of public meetings designed to solicit input from community members, including residents living along the MTA-owned Burbank/Chandler right-of-way on which the busway would be constructed.

Operating as an exclusive roadway for buses, the busway would speed travel across the San Fernando Valley, providing an attractive transit alternative for thousands of commuters. The travel time between North Hollywood and the planned Warner Center Transit Hub would be approximately 30 minutes, including stops. By comparison, it takes 55 minutes to make the same trip via on-street bus service available today.

The busway would pass through communities including North Hollywood, Valley Glen, Van Nuys, Sherman Oaks, Encino, Tarzana and Woodland Hills.

The busway also would link activity centers such as Warner Center, Pierce College, the Sepulveda Basin Recreation Area, the Van Nuys Government Center, Valley College and North Hollywood.

At the busway's North Hollywood terminus, the Metro Red Line subway will provide busway patrons with convenient access to Hollywood and downtown Los Angeles.

The 26-foot wide busway would be built in the median of the Burbank/Chandler right-of-way. Typically 100 feet in width, the right-of-way was purchased by the MTA from Southern Pacific in 1991.

Thirteen busway stations would be located at major cross streets and trip destinations, spaced approximately one mile apart along the route. While service frequencies would be adjusted as demand for service grows, initially during peak travel periods, the time between bus arrivals would vary between seven minutes to 10 minutes in each direction. A passenger information system at each station would inform travelers when the next bus is due to arrive.

Stations would have amenities typically associated with rail transit, such as covered waiting platforms, secure lighting and appealing design. Park-n-ride lots located at various locations along the route would provide parking for approximately 3,000 vehicles, augmenting existing parking spaces at the Metro Red Line North Hollywood Station.

The Los Angeles Department of Transportation may employ technology to briefly extend the duration of green signal lights to allow the smooth flow of buses operating on the busway, while not adversely impacting north-south traffic.

The busway would be fully landscaped with groundcover, trees and other plantings, including over 4,000 new trees.

Compressed Natural Gas (CNG) buses and other clean fuel technologies are under consideration for deployment along the busway. The MTA currently operates the largest fleet of CNG-fueled buses in North America.

The project will include room for a cross valley bikeway. The MTA will initiate the bikeway design as part of the busway design and will seek funding so the two projects could be built concurrently.

The cost of the full BRT, including the busway, stations, landscaping, environmental mitigation, park-n-ride lots, new buses, and traffic signals is estimated at approximately $285 million.

The following is the schedule and locations for public hearings on the Draft EIS/EIR:

Thursday, June 21, 2001
5 p.m to 8 p.m.
Los Angeles Pierce College
Student Activities Center
6201 Winnetka Avenue
Woodland Hills, CA 91371

Tuesday, June 26, 2001
5 p.m. to 8 p.m.
Los Angeles Valley College
Monarch Hall, Associated Student Union Conference Room
5800 Fulton Avenue
Valley Glen, CA 91401

Following the 45-day public comment period, the MTA Board will take the project under consideration tentatively at its July meeting, at which time it may designate the Locally Preferred Alternative for the corridor. This designation would allow continuation of preliminary engineering for the project and work on the Final EIR/EIS.

Final design and construction of the busway could start in late 2002 and the project likely would be completed in 2005.

In addition to providing oral testimony at any of the aforementioned public hearings, those persons wishing to comment on the Draft EIS/EIR may submit written comments to:

- Kevin Michel
  LACMTA
  One Gateway Plaza
  Los Angeles, CA 90012
  Mail Stop: 99-22-5

MTA-072

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Metro News

July 26, 2001
CONTACT:
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MTA MEDIA RELATIONS
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www.mta.net/press/pressroom
e-mail: mediarelations@mta.net
FOR IMMEDIATE RELEASE

MTA Board Approves Busway For San Fernando Valley East-West Corridor

- **Busway Route Includes Chandler Blvd. Alternative**

Versión en español

The MTA Board of Directors today adopted a 14-mile Bus Rapid Transit (BRT) system, also called a "busway," as the locally preferred alternative for the San Fernando Valley East-West Transit Corridor.

George Bungarda, Gruen Associates

Download the zip file (Windows) 3300x1852 (300 dpi) - 2.30mb

Artist's rendering of the proposed San Fernando Valley east west busway. This portion of busway features pedestrian path, bike path and landscaping on the busway near Coldwater Canyon Boulevard at Chandler and Goodland.

The busway would run from the Metro Red Line North Hollywood Station to Warner Center via the Burbank/Chandler right-of-way, which includes a 1.5-mile segment on Chandler Boulevard. At a later date the Board may consider an option to operate weekend buses on Oxnard Street and Lankershim Boulevard instead of on the Chandler Boulevard segment.

The Locally Preferred Alternative (LPA) designation is the federal government's term for the transit improvement preferred over other potential alternatives and is required before federal funding can be made available for construction.

Today's Board action followed a 65-day comment period, which included two public hearings held to solicit input from community members, including residents living along and near the MTA-owned Burbank/Chandler right-of-way on which the busway would be constructed. In addition, the MTA held a Board workshop July 19 to discuss the project during which additional public comment was taken.

Operating as an exclusive roadway for buses, the busway would provide a quicker transit alternative across the San Fernando Valley than is now available. The dedicated right-of-way will produce a travel time between North Hollywood and the planned Warner Center Transit Hub of approximately 30 minutes, including stops. By comparison, it takes 55 minutes to make the same trip via on-street bus service available today.

The Los Angeles Department of Transportation may employ technology to briefly extend the duration of green signal lights to allow the smooth flow of buses operating on the busway, while not adversely impacting north-south traffic. This technology has

already been successfully implemented on Ventura and Wilshire/Whittier Boulevards.

The busway would pass through communities including North Hollywood, Valley Glen, Van Nuys, Sherman Oaks, Encino, Tarzana and Woodland Hills. It would link activity centers such as Warner Center, Pierce College, the Sepulveda Basin Recreation Area, the Van Nuys Government Center, Valley College and the NoHo Arts District.

At the busway's North Hollywood terminus, the Metro Red Line subway would provide busway patrons with convenient access to Hollywood and downtown Los Angeles.

Thirteen busway stations would be located at major cross streets and trip destinations, spaced approximately one mile apart along the route. While service frequencies would be adjusted as demand for service grows, initially the time between bus arrivals during peak travel periods would vary between seven minutes to 10 minutes in each direction. A passenger information system at each station would inform travelers when the next bus is due to arrive.

Stations would have amenities typically associated with rail transit, such as covered waiting platforms, secure lighting, and appealing design. Park-n-ride lots located at various locations along the route would provide parking for approximately 3,000 vehicles, augmenting existing parking spaces at the Metro Red Line North Hollywood Station.

Compressed Natural Gas (CNG) buses and other clean fuel technologies are under consideration for deployment along the busway. MTA currently operates the largest fleet of CNG-fueled buses in North America.

The 26-foot wide busway would be built in the median of the Burbank/Chandler right-of-way, which was purchased by MTA from Southern Pacific in 1991. The right-of-way is generally 100 feet wide, leaving ample room for groundcover, new trees, bike and pedestrian paths, soundwalls, and other design enhancements.

The busway would be fully landscaped with groundcover, trees and other plantings, including more than 4,000 new trees.

The project will include room for a cross valley bikeway. The MTA will initiate the bikeway design as part of the busway design and will seek funding so the two projects could be built concurrently.

The project also will include the creation of two or more mid-block pedestrian crossings in the Orthodox community on Chandler Boulevard. They will include protected, signalized pedestrian crossings of both North and South Chandler Boulevards and the median busway.

The cost of the full BRT, including the busway, stations, landscaping, environmental mitigation, park-n-ride lots, new buses, and traffic signals is estimated at approximately $285 million. The state legislature awarded $145 million to the project. The balance will come from local transportation funds.

As a result of today's action, MTA staff and consultants will begin preparation of the final environmental impact statement/report for the full BRT project and complete the preliminary engineering. Construction of the busway would begin in 2003. MTA could

begin operation in 2005.

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Metro News

January 24, 2002
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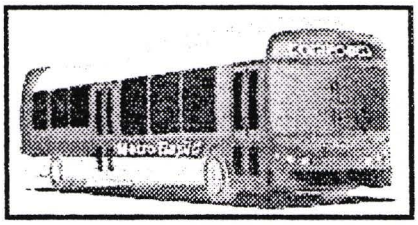
FOR IMMEDIATE RELEASE

High Capacity 'CompoBUS' MTA's Next Stop on High Tech Road



- **MTA to Purchase 30 of Lightweight Model**

The MTA stepped up its pursuit of high-tech transit solutions today as the MTA Board of Directors approved plans to purchase 30 lightweight high-capacity buses. North American Bus Industries (Anniston, Ala.) will manufacture the "CompoBUS," which could chart the future of MTA bus purchases for years to come.

Powered by compressed natural gas, the low-floor "CompoBUS" will be 45 feet long, five feet longer than current MTA coaches. The "CompoBUS" will transport 47 seated passengers, four more than a traditional high-floor bus and seven more than a low-floor bus.

Priced at $368,053, the "CompoBUS" employs some of the technology developed by MTA in its Advanced Technology Transit Bus program, including a shell constructed of lighter composite materials. Hence the name "*Compo*BUS." The composite material used primarily is fiberglass with a balsa core construction method similar to that found in the marine industry.

The "CompoBUS" will be 20 percent lighter than a conventional 45-foot steel-framed bus, resulting in better fuel economy and reduced brake wear. Other benefits of using composite material include simplicity of repair and absolute resistance to corrosion.

Until now, transit authorities have been reluctant to use 45-foot buses because the larger buses required a dual rear axle. A dual rear axle increases vehicle weight, thereby increasing fuel and maintenance costs. The 45-foot "CompoBUS" uses only a single rear axle, similar to MTA's 40-foot buses, resulting in a bus that is less expensive to operate and maintain.

"We see tremendous potential in the 'CompoBUS,'" said John Catoe, MTA deputy chief executive officer. "We're adding capacity while saving weight, a rare combination in bus manufacturing."

The first of the 30 "CompoBUS" coaches will begin arriving in summer 2003, while later this year 20 coaches of a shorter, 40-foot design will arrive and be placed into service.

"We're on a mission to provide the best service possible for the 1.2 million passengers

we carry every day on the Metro Bus system, while making the best use of the taxpayer dollars we spend," said John Fasana, MTA Board Chair. "The 'CompoBUS' is an excellent example of how new technologies can give us better value for our dollars in a package that combines innovation with proven reliability."

MTA-007

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Metro News

February 12, 2002
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FOR IMMEDIATE RELEASE

MTA Issues Final Environmental Report on San Fernando Valley East-West Busway

- **Construction of 14-Mile Project Could Begin in 2003**

Locations: Final EIS/EIR) is available for public review

(Los Angeles) - MTA has made available to the public the final environmental report for a planned 14-mile Bus Rapid Transit (BRT) system, also called a "busway," that would speed the daily travel of thousands of commuters between the Warner Center Transit Hub in the west San Fernando Valley and the Metro Red Line subway station in North Hollywood.

The Final Environmental Impact Report (Final EIR) for the San Fernando Valley East-West Transit Corridor Project includes responses to the public comments received following last year's release of the Draft EIS/EIR, and a refined project analysis. It also includes a detailed mitigation plan, which addresses community concerns regarding impacts during construction and operation of the busway project.

If the MTA Board on Feb. 28, 2002, votes to certify the Final EIR, MTA would initiate final design of the project.

Construction of the busway could begin in Spring 2003 and the busway could begin operations in Spring 2005.

Operating as an exclusive roadway for buses, the busway would speed travel across the San Fernando Valley, providing an attractive transit alternative for thousands of commuters.

"When the busway opens, a commuter will be able to make the trip from the future Warner Center Transit Hub to North Hollywood in approximately 35 to 40 minutes, including stops," said MTA Board Chair John Fasana. "This amounts to a tremendous savings in time when compared to on-street bus service which today takes 55 minutes for the same trip, and which will only lengthen as congestion increases."

The busway would pass through communities including North Hollywood, Valley Glen, Van Nuys, Sherman Oaks, Encino, Tarzana and Woodland Hills.

The busway also would link activity centers such as Warner Center, Pierce College, the Sepulveda Basin Recreation Area, the Van Nuys Government Center, Valley College and North Hollywood.

At the busway's North Hollywood terminus, the Metro Red Line subway will provide busway patrons with convenient access to Hollywood and downtown Los Angeles.

The 26-foot wide busway would be built in the median of the Burbank/Chandler right-of-way. Typically 100 feet in width, the right-of-way was purchased by the MTA from Southern Pacific in 1991.

Thirteen busway stations would be located at major cross streets and trip destinations, spaced approximately one mile apart along the route. While service frequencies would be adjusted as demand for service grows, initially during peak travel periods, the time between bus arrivals would vary between seven minutes to 10 minutes in each direction. A passenger information system at each station would inform travelers when the next bus is due to arrive.

Stations would have amenities typically associated with light rail transit, such as covered waiting platforms, art elements, security lighting, and an appealing design. Park-n-ride lots located at various locations along the route would provide parking for approximately 3,000 vehicles, augmenting existing parking spaces at the Metro Red Line North Hollywood Station and at the Balboa Blvd. Los Angeles Department of Transportation (LADOT) park and ride lot.

The LADOT will employ technology to briefly extend the duration of green signal lights to allow the smooth flow of buses operating on the busway, while not adversely impacting north-south traffic.

The busway will be fully landscaped with groundcover, trees and other plantings, including over 4,000 new trees.

Compressed Natural Gas (CNG) buses and other clean fuel technologies are under consideration for deployment along the busway. The MTA currently operates the largest fleet of CNG-fueled buses in North America.

The project will include a cross-valley bikeway. The MTA will initiate the bikeway design as part of the busway design and is seeking funding so the two projects could be built concurrently.

The cost of the full BRT, including the busway, stations, landscaping, environmental mitigation, park-n-ride lots, new buses, and traffic signals is estimated at approximately $329.5 million (escalated to year of expenditure dollars).

The Final Environmental Impact Report (Final EIR) is available for public review at:

MTA Headquarters One Gateway Plaza Los Angeles (southwest corner, Cesar Chavez & Vignes) 15th Floor, MTA Library	Canoga Park Branch Library 7621 Owensmouth Avenue Canoga Park, CA 91356
Encino Tarzana Branch Library 18231 Ventura Blvd. Tarzana, CA 91601	North Hollywood Library 5211 Tujunga Avenue North Hollywood, CA 91401

Valley Plaza Library 12311 Vanowen Street North Hollywood, CA 91401	Van Nuys Branch Library 6250 Sylmar Avenue Van Nuys, CA 91355
West Valley Regional Library 19036 Vanowen Street Reseda, CA 91335	Central Library 630 West Fifth Street Los Angeles, CA 90071
Northwest San Fernando Valley Library 11371 Tampa Avenue Northridge, CA 91326	Granada Hills Branch North-West San Fernando Valley Library 10640 Petit Avenue Granada Hills, CA 91344
Mid-San Fernando Valley Branch Library 16244 Nordhoff Street North Hills, CA 91343	Northridge West Valley Branch Library 9051 Darby Avenue Northridge, CA 91325
West San Fernando Valley Branch Library 23680 Victory Boulevard Woodland Hills, CA 91367	

Persons seeking information regarding the availability of copies of the Final EIR should contact Kathleen Sanchez at MTA at (213)922-2421. An online copy will be available soon on the MTA site under the heading of Transportation Programs/Transit Corridor Studies/San Fernando Valley East-West Transit Corridor.

MTA-015

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Metro News

February 28, 2002
CONTACT:
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e-mail: mediarelations@mta.net
FOR IMMEDIATE RELEASE

MTA Certifies Final Environmental Report on San Fernando Valley East-West Busway; Final Design to Get Underway

- **Construction Of 14-Mile Project Could Begin In 2003**

(Los Angeles) - The MTA Board today voted to certify the final environmental report for a planned 14-mile Bus Rapid Transit (BRT) system, also called a "busway," that would speed the daily travel of thousands of commuters between the future Warner Center Transit Hub in the west San Fernando Valley and the Metro Red Line subway station in North Hollywood. Today's action paves the way for the project's final design phase.

The Final Environmental Impact Report (Final EIR) for the San Fernando Valley East-West Transit Corridor Project includes responses to the public comments received following last year's release of the Draft EIS/EIR, and a refined project analysis. It also includes a detailed mitigation plan, which addresses community concerns regarding impacts during construction and operation of the busway project.

Construction of the busway could begin in Spring 2003 and the busway could begin operations in Spring 2005.

The eastern terminus of the busway will be the Metro Red Line subway's North Hollywood Station, which will create a convenient transfer point for both bus and rail passengers.

The western terminus of the busway will be the Warner Center Transit Hub, a project of the Los Angeles Department of Transportation, which is expected to be completed in late 2003.

Operating as an exclusive roadway for buses, the busway would provide a constant travel time across the San Fernando Valley, regardless of traffic congestion on parallel east-west routes.

A trip from the Warner Center Transit Hub to North Hollywood will take approximately 35 to 40 minutes, including stops, compared to on-street bus service which today takes 55 minutes for the same trip, and which will lengthen over time as congestion increases.

"Taking the busway will save commuters time and money," said John Fasana, MTA Board Chair. "The busway will be an attractive alternative for commuters now taking local service buses, as well as for many people who have been making the cross-

Valley commute by car."

"They'll be able to park their car at one of the many park-n-ride lots along the busway and take the bus to the Metro Red Line North Hollywood Station, where they can make a near seamless transfer to the subway for the trip to Hollywood, downtown Los Angeles or many other destinations served by the Metro Rail system," he added.

The busway would pass through communities including North Hollywood, Valley Glen, Van Nuys, Sherman Oaks, Encino, Tarzana and Woodland Hills. In addition to Warner Center, the busway would link activity centers such as Pierce College, the Sepulveda Basin Recreation Area, the Van Nuys Government Center, Valley College and North Hollywood.

Located on Owensmouth Avenue between Oxnard and Erwin streets, the Warner Center Transit Hub will be the first on-street transit hub in the City of Los Angeles and will serve as a major focal point for bus service in the west San Fernando Valley.

In addition to the busway, the transit hub also will be served by Metro Rapid Bus Line 750 which operates on Ventura Blvd., as well as additional Metro Bus lines and transit services operated by other providers.

The 26-foot wide busway would be built in the median of the Burbank/Chandler right-of-way. Typically 100 feet in width, the right-of-way was purchased by the MTA from Southern Pacific in 1991.

Thirteen busway stations would be located at major cross streets and trip destinations, spaced approximately one mile apart along the route. While service frequencies would be adjusted as demand for service grows, initially during peak travel periods, the time between bus arrivals would vary between seven minutes to 10 minutes in each direction. A passenger information system at each station would inform travelers when the next bus is due to arrive.

Stations would have amenities typically associated with light rail transit, such as covered waiting platforms, art elements, security lighting, and an appealing design. Park-n-ride lots located at various locations along the route would provide parking for approximately 3,000 vehicles, augmenting existing parking spaces at the Metro Red Line North Hollywood Station and at the Balboa Blvd. Los Angeles Department of Transportation (LADOT) park-n-ride lot.

The LADOT will employ technology to briefly extend the duration of green signal lights to allow the smooth flow of buses operating on the busway, while not adversely impacting north-south traffic.

The busway will be fully landscaped with groundcover, trees and other plantings, including over 4,000 new trees.

Compressed Natural Gas (CNG) buses and other clean fuel technologies are under consideration for deployment along the busway. The MTA currently operates the largest fleet of CNG-fueled buses in North America.

The project will include a cross-valley bikeway. The MTA will initiate the bikeway design as part of the busway design and is seeking funding so the two projects could

be built concurrently.

The cost of the full BRT, including the busway, stations, landscaping, environmental mitigation, park-n-ride lots, new buses, and traffic signals is estimated at approximately $329.5 million (escalated to year of expenditure dollars).

Persons seeking information about the project should contact Kathleen Sanchez at MTA at (213)922-2421, or visit the MTA web site at www.mta.net under the heading of Transportation Programs/Transit Corridor Studies/San Fernando Valley East-West Transit Corridor.

MTA-023

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Metro News

July 18, 2002
CONTACT:
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MTA MEDIA RELATIONS
(213) 922-2703/922-2700
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FOR IMMEDIATE RELEASE

MTA Buying High Capacity Buses, Pursuing Other Options to Further Reduce Bus Overcrowding

MTA continues making progress in reducing overcrowding on Metro buses but has reached the point where it needs higher capacity buses, exclusive busways and more Metro Rapid bus lines to improve service even more.

That's the message MTA will deliver next week to the special master who oversees the Consent Decree MTA signed nearly six years ago to ease overcrowding on Metro buses.

Since the decree went into effect in October 1996, MTA has spent close to $1 billion on new buses and expanded service. The agency has purchased 2,000 new compressed natural gas buses and while many of these replaced aging diesel buses that were prone to breakdowns, the MTA also has expanded peak hour bus service by nearly 500 buses. This year MTA has budgeted for a record amount of bus service that will be operated by MTA and its contract carriers.

MTA also launched special high tech Metro Rapid service that cut travel times by about 25 percent on Wilshire and Whittier boulevards between Santa Monica and Montebello and on Ventura Boulevard in the San Fernando Valley. The MTA Board has approved expanding Metro Rapid by 23 more lines starting with Vermont Avenue and South Broadway this December.

Metro Rail expansion also has helped ease bus overcrowding. Customer surveys have documented that the vast majority of riders on both Metro Bus and Rail are low-income riders who are transit dependent. Many opt for Metro Rail because it's faster than traffic on surface streets.

The transportation agency also began decentralizing its bus operations this summer in an effort to be more responsive to local community needs.

Yet, some overcrowding persists on the busiest Metro bus lines. In its latest quarterly report monitoring the Consent Decree, MTA will acknowledge that. However, MTA officials note the solution is not just adding more regular buses.

"On busy streets such as Olympic Boulevard, we're running buses every 80 seconds during peak hours and we still can't keep up with demand," noted MTA Deputy CEO John Catoe. "That's an example where we need to be creative and switch to higher capacity vehicles or run Metro Rapid buses that can extend green lights for us."

MTA has gone out to bid for up to 200 articulated buses that are 60-feet long and can carry about half as many more passengers than a regular 40-foot bus (56 - 60 seats compared to 40 on a low-floor bus or 43 for a traditional high-floor bus). The MTA Board is expected to award a contract this fall and the buses will start arriving about 18 months later.

In addition, the first of 30 45-foot "CompoBUS" coaches will begin arriving in summer 2003. The CompoBUS can transport 47 seated passengers.

"Another way to increase capacity is Metro Rapid and starting in December we will add at least two new lines on our busiest routes every six months as the signal priority equipment is installed in the streets and buses," Catoe noted.

Catoe said the optimum solution is to build exclusive busways along former railroad rights-of-way MTA owns, and that's what the MTA is doing in the San Fernando Valley. In other areas, MTA is seeking bus-only lanes on existing streets so the buses don't compete with traffic.

"The reality is MTA buses operate 12 percent slower on crowded Los Angeles area streets than they did 15 years ago because of worsening traffic which we can't control," Catoe said.

Indeed, Washington, D.C. lawyer Donald Bliss, the special master who oversees implementation of the Consent Decree, recently acknowledged that there are circumstances beyond MTA's control that cause buses to become overcrowded and adding more buses in those cases may not be justified.

For example, there may be accidents, weather, schools, work or theaters letting out that may cause temporary overcrowding. Metro buses that cross Alameda along Florence or Vernon have been delayed by freight trains.

Under the Consent Decree, MTA must meet load factor targets that limit how many passengers can stand, on average, on MTA buses. The busiest Metro Bus lines are measured by schedule checkers who count everyone who stands on buses as they pass key intersections and then calculate the average number of standees for all the buses that pass by in a 20-minute window.

Before the Consent Decree was signed six years ago, an average of 18 people stood during rush hours on some busy bus lines. Today, the load factor targets have cut that at least in half.

Like other transit agencies, MTA meets load factor targets by scheduling sufficient service. MTA schedules extra service far beyond what is necessary to meet the targets.

"We meet those targets 98 percent of the time systemwide, but there is no way any transit agency can do so 100 percent of the time because of circumstances beyond our control," Catoe said.

"That doesn't mean we shouldn't strive to do better and we are," added Catoe, who joined MTA last fall after managing the Big Blue Bus in Santa Monica, one of the country's most highly regarded bus systems.

Catoe said MTA is concentrating on factors it can control such as deploying new coaches, preventive maintenance and better on-street supervision of drivers to adhere to schedules.

"Our plans for articulated buses, Metro Rapid expansion and construction of new busways as well as new Metro Rail service all are critical elements in that effort," Catoe added.

It's an expensive undertaking. This fiscal year MTA has budgeted more than $1.2 billion, nearly half its total budget, for buses although the agency is responsible for streets and highway improvements, rail, paratransit for disabled persons and many other mobility programs that serve the 10 million residents of Los Angeles County.

"It's a tough balancing act but we're doing our best to continue improving bus service while fulfilling the other programs which MTA is mandated by legislation to fulfill," Catoe noted.

MTA-066

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Metro News

January 17, 2003
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FOR IMMEDIATE RELEASE

MTA Busway Coming to the Valley

MTA Kicks off Metro Rapid Transitway Project in San Fernando Valley

- **Award of $3.8 Million Bridge Construction Marks First Phase of Planned 14-Mile Dedicated Transitway that Extends Los Angeles' Rapid Transit Network Deeper in San Fernando Valley**

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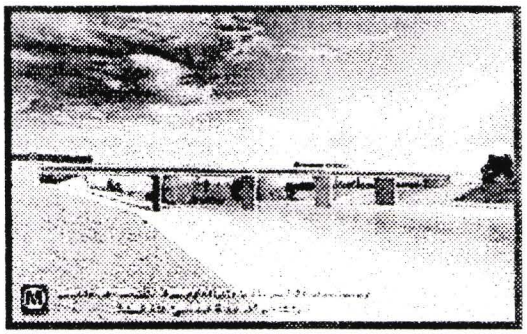

MTA has awarded Fontana-based Brutoco Engineering & Construction Company a $3.8 million contract for construction of a bus bridge over the Los Angeles River in the Sepulveda Basin.

Construction has begun on the San Fernando Valley Metro Rapid Transitway Project, which will bring quicker, more efficient bus service to Valley commuters and easier access to the countywide Metro Rail system in two years.

MTA kicked off the San Fernando Valley Metro Rapid Transitway project, Jan. 17, at a construction site in Van Nuys during a media event that drew a number of local, state and federal officials.

MTA has awarded Fontana-based Brutoco Engineering & Construction Company a $3.8 million contract for construction of a bus bridge over the Los Angeles River in the Sepulveda Basin. The contract represents the first phase of the San Fernando Valley Metro Rapid Transitway Project, a planned 14-mile landscaped transitway that will run between the North Hollywood Metro Red Line Station and Warner Center in the West Valley. The transitway, comprising 13 busway stations spaced approximately one mile apart, is scheduled to open in Spring 2005.

Under the fixed-price contract, Brutoco will build the first and largest of three bridges located along the transitway. The new, five-span bridge will be capable of spiriting high-capacity, clean-fuel Metro Rapid buses across the Los Angeles River, providing a lifeline to Valley schools, colleges and major business centers. The overall transitway project has the potential to create up to 9,500 full-time jobs in the area, according to MTA project estimates.

The project is the first of its kind in Southern California, and represents an innovative solution whereby transit buses operate on mostly exclusive guideways unimpeded by surrounding traffic.

"The San Fernando Valley Metro Rapid Transitway Project, after years of planning, is now a reality with the award of this first major contract to begin construction," said MTA Board Chairman and Los Angeles City Councilman Hal Bernson. "Once completed, the transitway will serve residents of the San Fernando Valley with a real, dedicated rapid transit system connecting Warner Center with the North Hollywood Metro Red Line Station."

Trips made between Warner Center and the North Hollywood Metro Red Line will now take about 35-40 minutes using Metro Rapid buses, compared to 50 minutes for the same trip using current on-street buses. The transitway will pass through communities including North Hollywood, Valley Glen, Van Nuys, Sherman Oaks, Encino, Tarzana and Woodland Hills. The transitway will link activity centers such as Pierce College, the Sepulveda Basin Recreation Area, the Van Nuys Government Center, Valley College and North Hollywood.

As part of the project, MTA plans to build bike and pedestrian paths along the route to give residents more transportation options when using the transitway. Project planners also have factored in transitway beautification into the plans, and will landscape 80 acres of the exclusive transitway, planting 7,000 trees and 900,000 drought-tolerant shrubs. Park-and-ride lots will be built at five stations, providing 3,300 new parking spaces.

"The Valley has waited a long time for this hugely important regional transportation improvement project," said Roger Snoble, MTA CEO. "In light of the state's current budget crisis, the need for public works projects that spur economic development and create jobs for Californians is critical. This project is ready to go. Along with the Eastside Light Rail Project to extend the Metro Gold (C) Line, the San Fernando Valley Metro Rapid Transitway Project is a top MTA priority, and we are confident that it will receive the necessary state funds to complete it."

"The construction of the transitway is what the transit-dependent in the San Fernando Valley need. This innovative project would be like a Metro light rail system on rubber wheels that will allow riders to cut travel time by one-third," said Board Member and Mayor of Los Angeles Jim Hahn. "The project is good for the environment and will help keep Los Angeles moving."

The San Fernando Valley Metro Rapid Project is part of a broader MTA program to expand use of high-capacity Metro Rapid buses in 24 locations throughout Los Angeles County. This represents 356 miles of bus service in 34 cities and 11 Los Angeles unincorporated communities. Metro Rapid buses employ a signal priority system which reduces the amount of time a Metro Rapid bus is stopped by extending the length of green traffic signals and reducing the length of red traffic signals. Consequently, Metro Rapid buses reduce travel times up to 25 percent, a significant time-savings for passengers.

The Metro Rapid Transitway Project will cost $329.5 million, with an additional $10.9 million for a bikeway project built in parallel with the transitway.

MTA-006

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Metro News

January 23, 2003
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FOR IMMEDIATE RELEASE

Powered by compressed natural gas, the low-floor "Compo-Bus" will be five feet longer than current MTA coaches and will seat 46 passengers, 16 percent more seats than the traditional 40-foot buses now in operation.

MTA Board Approves Purchase of 70 Additional High-capacity 45- Foot High-tech Buses

Taking advantage of an option to purchase more high capacity buses, the MTA Board of Directors today approved the acquisition of 70 additional 45-foot "Compo-Bus" coaches.

Powered by compressed natural gas, the low-floor "Compo-Bus" will be five feet longer than current MTA coaches and will seat 46 passengers, 16 percent more seats than the traditional 40-foot buses now in operation.

The approval of the option to buy an additional 70 buses will bring to total 100 45-foot "Compo-Bus" coaches. The Board last year approved the first order of 30 new 45-foot buses, which are expected to begin arriving this summer.

Each bus is priced at $373,156 and employs some of the technology developed by MTA in its Advanced Technology Transit Bus program, including a shell constructed of lighter composite materials. Hence the name "Compo-Bus." The composite material used primarily is fiberglass with a balsa core construction method similar to that found in the marine industry.

The "Compo-Bus" will be lighter than a conventional 45-foot steel-framed bus, resulting in better fuel economy and reduced brake wear. Other benefits of using composite material include simplicity of repair and absolute resistance to corrosion.

North American Bus Industries (NABI) in Anniston, Alabama will manufacture the "CompoBUS." The total contract price for the additional 70 buses plus spare parts and

diagnostic equipment is $28,679,137.

MTA-007

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Metro News

February 26, 2003
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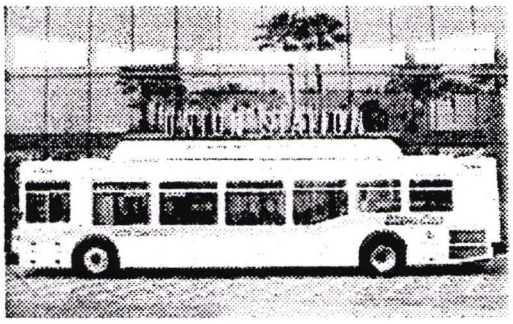
FOR IMMEDIATE RELEASE

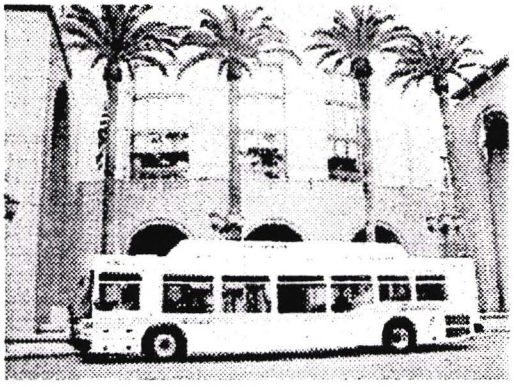
Bus of the Future is Latest Addition to MTA Bus Fleet

- **Compo-Bus Made of Carbon Fiber Reinforced Body**

PHOTOS: LACMTA/GAYLE ANDERSON



Editors: To request a print-size digital photo, e-mail: mediarelations@mta.net or call Jose Ubaldo, (213).922-3087._



The MTA keeps improving its bus fleet with 20 new vehicles named "Compo-buses," which will debut in revenue service this week in the South Bay. The "Compo-bus" is a 40 foot, 40-seat coach with a corrosion proof and carbon fiber reinforced body.

Weighting 2,100 pounds less than a traditional steel-frame bus, the Compo-bus will be stronger and more resistant to collision damage and also will feature faster acceleration, better engine performance and fuel economy. The lighter body also means the bus will suffer less brake wear and tear. Each Compo-bus costs $310,000.

The first production model of the Compo-bus built by North American Bus Industries can trace its origins to MTA's Advanced Technology Transit Bus (ATTB), which also featured a molded body of composite materials.

"We can say that this is the bus of the future and MTA is the first in the country to use such a vehicle in revenue service," say Michael A. Bottone, Jr., MTA Director of Vehicle Technology.

The use of materials such as carbon and polyester composites is expected to extend the life of the bus body from the usual 12 years to 16 or 18 years.

Both the vehicle body and the chassis are a single piece structure, which makes the bus resilient to side impacts. It also can absorb more impact in case of an accident. "We'll see a significant reduction on major body repairs," say Michael Chang, MTA Vehicle Technology Engineer. "It will be like repairing any other fiberglass material."

The bus is designed for easier cleaning with fewer projections to catch dirt and debris.

Seats have high-contour bottoms and backs for passenger comfort. Wheelchair securement devices are simple and quick to use.

An average person won't notice the difference between a regular steel-frame bus and a Compo-bus.

The MTA is the first transit agency in the country to put the Compo-bus into service and this is causing quite a stir in the transit industry. New York, Chicago, Antelope Valley Transit and other properties are looking at this new bus and how it works.

Starting next summer, MTA will take delivery of the first of the100 Compo-buses that are 45-feet long and can seat 15 percent more passengers than a standard 40-foot bus. The 20 Compo-buses MTA has now are standard size buses.

MTA-021

Editor's Note: For a digital image of the new Compo-bus, please call José Ubaldo, (213) 922-3087.

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Metro News

February 27, 2003
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FOR IMMEDIATE RELEASE

MTA Board of Directors Approves Purchase of 200 High-capacity Articulated Compressed Natural Gas Buses

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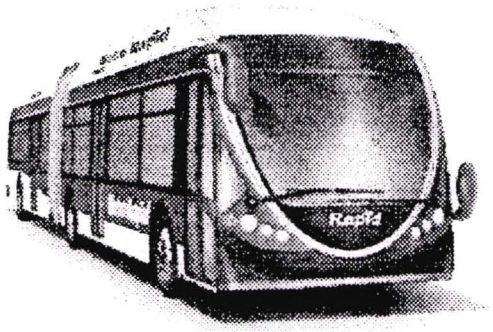

The MTA Board of Directors today approved the purchase of 200 high capacity 60-foot articulated buses powered by compressed natural gas as the final installment of the Board's original plan to purchase nearly 2,100 new buses. The articulated buses seat 50 percent more passengers than a standard 40-foot bus.

"The MTA Board has been committed over the past few years in modernizing our bus fleet and improving the quality of service for our riding passengers," said MTA Board Chairman Hal Bernson. "These new high capacity buses, once in service, will help carry more people quicker on Metro Rapid routes than conventional 40-foot buses."

The actual execution of the contract to purchase the 200 articulated buses is contingent on funding from the State's Traffic Congestion Relief Program (TCRP), which has been temporarily suspended.

Total cost for the bus procurement is $138,888,329 for 200 low floor CNG articulated buses manufactured by North American Bus Industries in Anniston, Alabama. Each vehicle will cost $632,914.

The new buses will be 60-feet in length and will "bend" in the middle to improve their operation on city streets. They will feature an advanced aerodynamic design, larger passenger windows, three large doors for entry and exit, comfortable seating for up to 60 passengers and will be significantly quieter that existing MTA buses.

The new state-of-the-art CNG articulated buses will begin arriving in the summer of 2005 and will be placed into service on the new San Fernando Valley Metro Rapid Transitway in the San Fernando Valley, now under construction, as well as other MTA Metro Rapid bus routes in demand for high capacity buses.

MTA-024

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Metro News

April 3, 2003
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MTA Moves Forward with the Purchase of 200 High-capacity Buses and a Major Design/Build Contract for the San Fernando Valley Metro Rapid Transitway

- **MTA CEO Roger Snoble Gives Green Light to Major Transportation Contracts**

<Versión en espanol
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MTA CEO Roger Snoble signs a document authorizing MTA to proceed with the award of major contract for construction of the San Fernando Valley Metro Rapid Transitway and the purchase of 200 state-of-the-art articulated buses. Pictured with Snoble are, from left front, Dennis Mori, executive officer, Construction Project Management and Los Angeles County Supervisor Zev Yaroslavsky. Back row: David Yale, director, MTA Regional Planning and Michael Turner, manager, MTA Government Relations. PHOTO: LACMTA/Bill Heard

With a funding agreement from the California Transportation Commission (CTC) in hand, MTA's CEO Roger Snoble today awarded two major contracts that will add 200 state-of-the-art 60-foot articulated buses to MTA's fleet and initiate a major design and construction contract for the San Fernando Valley Metro Rapid Transitway.

MTA's Board of Directors previously approved both contracts but award of them was contingent on funding issues being resolved by the CTC in Sacramento. Funding for both projects come from the State's Traffic Congestion Relief Program (TCRP), which had been temporarily suspended due to the state's budget crisis.

To keep the transportation projects going, MTA submitted a plan to the CTC today that called for the MTA to advance itself the state's funding share ($332.2 million) for these projects by borrowing the money against future sales tax revenue in return for guarantees that the CTC would repay the money in future years. The CTC voted 7-0 to approve the plan.

"We are grateful for the action taken by the CTC today," said MTA CEO Roger Snoble. "These are vital transportation projects for the region in reducing traffic congestion and relieving overcrowding on our buses."

The bus procurement contract awarded today will bring 200 low floor compressed natural gas articulated buses to the region. Each bus seats 50 percent more passengers than a standard 40-foot bus. Each bus costs $632,914 and will be manufactured by North American Bus Industries in Anniston, Alabama. Total value of the contract is $138.9 million. Buses will begin arriving in the summer of 2005.

The design/build contract was awarded today to Shimmick/Obayashi Joint Venture for the design and construction of the San Fernando Valley Metro Rapid Transiway, a planned 14-mile landscaped transitway that will run between the North Hollywood Metro Red Line Station and Warner Center in the West Valley. Total value of the design/build contract is $150.4 million.

The San Fernando Valley Metro Rapid Transitway project is the first of its kind in Southern California, and represents an innovative solution whereby transit buses operate on mostly exclusive guideways unimpeded by surrounding traffic. The transitway, comprised of13 busway stations spaced approximately one mile apart, is scheduled to open in Summer 2005.

Total cost of the project is $329.5 million, with an additional $8.1 million for a bikeway project built in parallel with the transitway.

The state's funding share approved today by the CTC for the purchase of the articulated buses is $27.8 million. State funding for the bus transitway approved is $98 million. Also approved today by the CTC are funding requests for the purchase of additional light rail vehicles for the Pasadena Metro Gold Line ($15.4 million) and for the Eastside extension of the Metro Gold Line ($191 million).

MTA-046

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Metro News Pressroom

July 22, 2004
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Metro Board Approves Purchase of 75 New Buses

The Metro Board of Directors today approved the purchase of 75 new compressed natural gas (CNG) buses from North American Bus Industries (NABI). The $30 million purchase will ensure that Metro has sufficient quantities of new buses available to comply with the requirements of the federal Consent Decree to continue Metro Bus improvements.

"Exercising an option on an existing contract with North American Bus Industries will speed the delivery of these 75 buses," said Frank Roberts, Metro Board Chair. "Our customers will benefit greatly from the infusion of these new buses into the Metro fleet."

On January 12, 2004, Special Master Donald Bliss, who oversees Consent Decree compliance, ordered Metro to purchase the equivalent of 145 new buses by June 30, 2005. The purchase of these 75 40-foot buses, combined with other high-capacity 45-foot and 60-foot buses currently on order, will allow Metro to place the equivalent of 233 additional 40-foot buses (a total of 9,310 additional passenger seats) into active service by June 30, 2005.

Funding for this purchase will come from $15.9 million of general fund sales/leaseback proceeds and $14.1 million of right-of-way lease revenues. Metro considered initiating a new procurement(s) for additional new buses, or exercising available options for additional 60-foot buses. However, neither of these options would have provided any of the required buses prior to the June 30, 2005 date specified by the Special Master.

METRO-134

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Metro News Pressroom

August 6, 2004
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PHOTO: SHANTAY IOSIA

Metro Chairman and Lancaster Mayor Frank Roberts, at podium, introduces new 45-foot Metro Bus to be placed into service. Also pictured, from left, North American Bus Industries executive Cliff Henke, Metro Deputy John Catoe and Metro Board Member and County Supervisor Yvonne Brathwaite Burke.

Metro Rolls Out First High Capacity State-of-the-Art 45-Foot Bus

Metro officials today unveiled the first of 100 new state-of-the-art high capacity 45-foot Metro Buses that will be placed into service in the next few weeks on various Metro Rapid Bus lines serving the region.

The new buses, manufactured by North American Bus Industries, are five feet longer than a traditional 40-foot transit bus and have a sleeker design manufactured with special composite materials. The new low-floor buses are powered by compressed natural gas.

"Today marks another major milestone in delivering quality service to our bus patrons with the addition of these new high-capacity buses," said Metro Board Chairman Frank Roberts. "We can truly say that this is the bus of the future as we continue our pursuit of high-tech solutions to provide the best service we can for the region."

Metro will add 100 new 45-foot buses into service over the next year. The new high capacity buses seat 46 passengers instead of the 40 seats on a standard 40-foot transit bus, a 16 percent increase in capacity.

The fiberglass and carbon fiber reinforced body of the new bus weighs the same as a regular steel framed bus, but carries more passengers and is five feet longer, stronger and resistant to corrosion and collision damage.

The buses also feature power disc brakes to enhance safety. The state-of-the-art components on board the bus will reduce maintenance costs and improve fuel economy. Each bus costs $370,000.

In addition, Metro has ordered 200 articulated buses that are 60-feet long and have 50 percent more capacity than a standard bus. The first of these super-sized buses will go into service next year.

METRO-141

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Metro News Pressroom

August 26, 2004
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Metro CEO Orders Work to Resume on Metro Orange Line

- Eleven Uncompleted Intersections are 'Immediate Focus'

(Los Angeles) – Metro Chief Executive Officer Roger Snoble today ordered Shimmick/Obayashi, the contractor for the Metro Orange Line transitway project, to resume construction immediately. Snoble's action followed notification from the Court of Appeal late Wednesday that it would not issue any further rulings on an earlier appeal by Metro, thereby lifting a stay on construction it imposed on Aug. 2.

"As of this morning, we have removed the 'stop work' order on the Metro Orange Line construction," CEO Roger Snoble reported at Thursday's Metro Board of Directors meeting. "The contractor will be back on the job this afternoon."

Today's order by Snoble authorized Shimmick/Obayashi to hire new employees to return the Metro Orange Line project to full construction as quickly as possible. Snoble said the contractor's "immediate focus" would be on completing 11 intersections left unfinished following the Aug. 2 stay ordered by the Court of Appeal. Priority would be given to those areas where motorists and businesses have been most impacted by the halt on construction.

The $330 million project has been on hold for 24 days, leaving an uncompleted construction site that stretches from the North Hollywood Metro Red Line subway station 14 miles west to Warner Center.

As construction is set to resume, attorneys for the agency will proceed with an appeal to the California Supreme Court. The high court will be asked to overturn a Court of Appeal ruling requiring the agency to study Metro Rapid bus service as an alternative to the Metro Orange Line. A Metro Rapid alternative was not included in the original Environmental Impact Report (EIR) because at the time the EIR was being written Metro Rapid was only a demonstration project.

METRO-149

Metro News Pressroom

October 15, 2004
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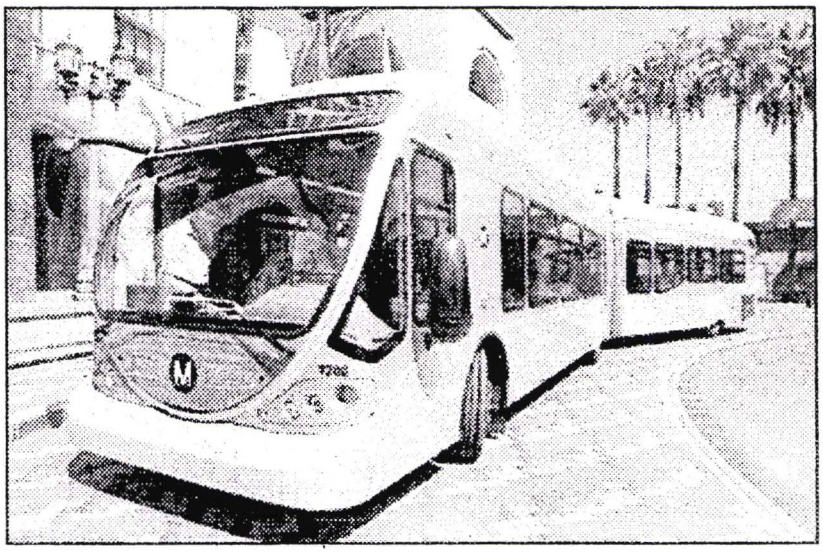
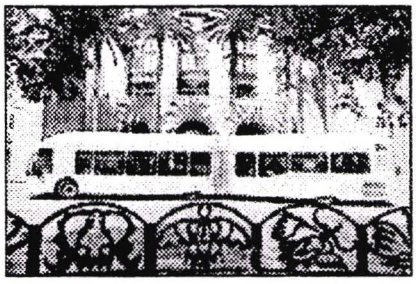
PHOTOS: METRO/DENIZ DURMAS

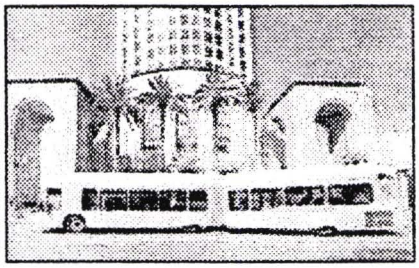
Metro Raises Technology Bar with Super-Sized *Metro Liner* ; Bus Prototype Unveiled Today in North Hollywood

- 200 Metro Liners to Operate on Metro Orange Line, Other High Ridership Corridors



Media: To request print-sized 300 dpi images of new Metro Liner bus, state media outlet and click here: Photos





(Los Angeles) – Metro officials gathered in North Hollywood today to showcase the first of 200 high-capacity Metro Liner buses, which will operate on many of L.A.'s busiest bus corridors and on the Metro Orange Line when it opens in 2005. The technologically sophisticated super-sized 60-ft. Metro Liner will be the first articulated bus to operate in Los Angeles in two decades.

"The Metro Liner promises to take public transit in Los Angeles to a new level," said Frank Roberts, Lancaster Mayor and Los Angeles County Metropolitan Transportation Authority Board Chair. "This vehicle is a head-turner and so impressive in person that I believe it will attract many new riders to the Metro System and provide our existing customers with service the likes of which they've never experienced."

Of the 200 Metro Liners, 22 will be deployed on the Metro Orange Line, a 14-mile exclusive transitway due to open in 2005. The Metro Orange Line will whisk passengers in approximately 40 minutes from Warner Center in the West San Fernando Valley to the line's future North Hollywood Station, where passengers can make an easy connection to the Metro Red Line subway just across the street.

"I anticipate the Metro Orange Line will be a huge success and central to that success will be the Metro Liner," said Roger Snoble, Metro chief executive officer. "The Metro Liner will provide passengers with rail-like service in an attractive, aerodynamically designed vehicle that's far from the bread-box design of the typical transit bus."

The remaining 178 Metro Liners will operate on many of Metro's highest ridership corridors, including Wilshire Boulevard and Vermont Avenue.

"On our busiest bus lines, we're already running at 80-second headways and still can't keep up with demand," said John Catoe, Deputy CEO of Metro. "The Metro Liner will give us greater capacity and its wider doors will make boarding and alighting much easier for our passengers."

Manufactured by North American Bus Industries in Anniston, Ala., the Metro Liner will be the first articulated bus to operate in Los Angeles in two decades. At 60 feet, the Metro Liner is 20 feet longer than the standard transit bus and seats 57 passengers, 45 percent more than the standard bus.

"NABI has produced and delivered hundreds of articulated buses over the past decade, and thus has extensive experience with these highly specialized vehicles," said Bill Coryell, NABI Vice President of Sales. "However, it was the vision of Metro, in particular Roger Snoble, John Catoe and Metro's distinguished Board of Directors, that inspired and motivated NABI to proceed with the development of this dramatic new product, which constitutes a quantum step toward the future in high-capacity bus design."

The 320 horsepower Cummins CNG (compressed natural gas)-powered engine was engineered from the ground up to run on CNG. Previously, most CNG engines were conversions of diesel engine designs. An "articulate joint," or bellows, in the center of the bus allows the bus to "bend" as it negotiates curves and corners.

"This is the most advanced transit vehicle ever introduced in North America," said John Drayton, Metro's vehicle acquisition manager. "It really is the biggest leap in styling and appearance inside and out that our industry has seen in over 30 years."

Two hundred Metro Liner buses, each one costing $633,000, are on order from NABI. Delivery of the first 30 vehicles is scheduled to be completed by June 2005 and the remaining 170 vehicles by June 2006.

METRO-174

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Metro News Pressroom

October 22, 2004
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Revised Environmental Report for Metro Orange Line Corridor Released; Study Examines Rapid Bus Alternative

- Study notes several advantages of Metro Orange Line over Rapid Bus

Metro today released a Revised Final Environmental Impact Report (Revised FEIR) for the San Fernando Valley East-West Transit Corridor for a 30-day public review. The draft report includes a court-ordered study of a Rapid Bus alternative to the current 14-mile Metro Orange Line transitway project now under construction from North Hollywood to Warner Center.

The Revised FEIR was prepared at the direction of the California Court of Appeal, which ruled July 19, 2004 that the east-west corridor's Final EIR, previously acted on by the Metro Board, also should have considered multiple Rapid Bus routes as an alternative to the Metro Orange Line project. The Final EIR evaluated three project alternatives: a No Build Alternative, a Transportation Systems Management (TSM) Alternative (enhancement of the existing bus system), and a Bus Rapid Transit (BRT) Alternative (three variations including the Metro Orange Line Full BRT).

Based on the court's decision, Metro and its consultants studied three Rapid Bus alternatives for the Revised FEIR including:

- Three East-West Rapid Bus Routes Alternative (Sherman Way, Vanowen Street and Victory Boulevard)
- Five East-West Rapid Bus Routes Alternative (Sherman Way, Victory Boulevard, Oxnard Street, Burbank Boulevard, and Chandler Boulevard)
- Rapid Bus Network Alternative (as submitted by Citizens Organized for Smart Transit, this network of nine Rapid Bus routes would consist of three east-west routes and six north-south routes)

The Revised FEIR examined the environmental impacts and the costs and benefits of each Rapid Bus alternative and the Metro Orange Line and reached the following conclusions:

- The Metro Orange Line would attract substantially more new riders than any of the Rapid Bus alternatives.
- The Metro Orange Line would result in the greatest system-wide travel time savings.
- The Metro Orange Line would have the most consistent improved travel time, which would

not be compromised over time as the result of increasing traffic congestion.

- The Rapid Bus alternatives would all have lower capital costs than the Metro Orange Line because of their minimal construction requirements. However, because the Rapid Bus alternatives would attract fewer new riders than the Metro Orange Line, the Rapid Bus alternatives exhibit poor cost-effectiveness measured on a per-new-rider basis.

- The exclusive transitway operation of the Metro Orange Line has distinct land use benefits that would encourage transit oriented development at/around stations and is consistent with adopted local planning documents.

- Operating costs for the Rapid Bus Network Alternative would be up to $10 million more each year than the cost to operate the Metro Orange Line.

The Revised FEIR analyzes the Rapid Bus alternatives and is available for public review on Metro's website at www.metro.net/projects_plans/ and at Metro's Dorothy Peyton Gray Transportation Library (One Gateway Plaza, 15th Floor, Los Angeles 90012) and at the following public libraries:

- Canoga Park Branch Library, 7260 Owensmouth Ave., Canoga Park, CA 91303
- Mid-Valley Regional Branch Library, 16244 Nordhoff St., North Hills, CA 91343
- North Hollywood (Amelia Earhart) Library, 5211 Tujunga Ave. North Hollywood, CA 91601
- Northridge Branch Library, 9051 Darby Avenue, Northridge, CA 91325
- Panorama City Branch Library, 14345 Roscoe Boulevard, Panorama City, CA 91340
- Sherman Oaks Branch Library, 14245 Moorpark Street, Sherman Oaks, CA 91423
- Superior Court Law Library, 6230 Sylmar Avenue, #107, Van Nuys, CA 91401
- Valley Plaza Library, 12311 Vanowen Street, North Hollywood, CA 91605
- Van Nuys Branch Library, 6250 Sylmar Avenue, Van Nuys, CA 91401
- West Valley Regional Library, 19036 Vanowen Street, Reseda, CA 91335

The public review period for the Revised FEIR is 30 days pursuant to approval from the Office of Planning and Research. It commences on October 23, 2004 and ends on November 22, 2004. Currently, no public hearings on the contents of the document are scheduled to be held.

Pursuant to Guidelines Section 15088.5(f)(2), Metro asks that reviewers limit their comments to the Revised FEIR. Comments on the draft Revised FEIR may be submitted, in writing, on or before November 22, 2004 to:

Mr. Roger L. Martin
Project Manager, San Fernando Valley/North County Area Team
Metropolitan Transportation Authority
One Gateway Plaza
Mail Stop: 99-22-9

Los Angeles, CA 90012-2952
213- 922-1462 (Direct Line) 213-922-3060 (Fax)
martinr@metro.net (Email)

Once the public comment period has expired, Metro will evaluate and respond to the environmental issues raised in comments. The comments and responses will be incorporated into the Revised FEIR. Upon completion, the Revised FEIR will be presented to the Metro Board December 13, 2004 for consideration of certification and approval of a San Fernando Valley East-West Transit Corridor project.

METRO-182

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EXHIBIT VII

FEIR RUN TIME ESTIMATES FOR BUS RAPID TRANSIT ALTERNATIVES

Figure A-1: Run Time Estimate for Bus Rapid Transit (BRT) - 28.8 Minute, Lower Bound

STATION / LINE SECTION	PARKING	MAX. SPEED	DISTANCE (MILES) segment	DISTANCE (MILES) sta.-sta.	CUMUL. DIST. (MILES)	RUNNING TIME (MIN.)	DELAY TIME (MIN.)	*STA-STA TIME INCL DWELL*	ELAPSED RUN TIME (MIN.)
NORTH HOLLYWOOD	(RED LINE)				**0.00**				**0.00**
on-street		35	0.33			0.72	0.15		
		50	0.81			1.18	0.15		
LAUREL CANYON				*1.14*	**1.14**			*2.54*	**2.54**
		55	1.56			2.26	0.15		
FULTON/BURBANK				*1.56*	**2.70**			*2.74*	**5.28**
		50	0.73			1.33	0.15		
WOODMAN				*0.73*	**3.43**			*1.81*	**7.10**
		50	0.99			1.65	0.15		
VAN NUYS	1,060			*0.99*	**4.42**			*2.13*	**9.23**
		50	0.98			1.63	0.15		
SEPULVEDA	1,200			*0.98*	**5.40**			*2.11*	**11.34**
curves 405+00 to 444+00		50	0.77			1.24			
		50	0.40			0.62	0.15		
WOODLEY				*1.17*	**6.56**			*2.34*	**13.68**
curve 337+00 to 345+00		50	0.66			1.11			
		50	0.16			0.34	0.15		
BALBOA	240			*0.82*	**7.39**			*1.93*	**15.60**
no White Oak Station		55	2.18			2.93	0.15		
RESEDA	400			*2.18*	**9.56**			*3.41*	**19.02**
		50	1.00			1.66	0.15		
TAMPA				*1.00*	**10.57**			*2.14*	**21.16**
		55	1.10			1.75	0.15		
WINNETKA/MASON	350			*1.10*	**11.67**			*2.23*	**23.39**
		50	1.00			1.66	0.15		
DESOTO/VARIEL				*1.00*	**12.67**			*2.14*	**25.54**
		35	0.20			0.51	0.15		
turn to Owensmouth		25	0.10			0.24			
on-street		35	0.96			1.77	0.30		
WARNER CENTER (Owensmouth)				*1.26*	**13.93**			*3.30*	**28.83**
Totals:	*3,250*		*13.93*			*22.58*	*2.25*	*28.83*	

Average Station Spacing: *1.16*

Average speed: *29.0* *mph*

Average station dwell time:	20	secs =	0.33	minutes
Average intersection delay (no station):	0	(assume pre-emption)		
Average intersection delay at station:	*8*	secs =	0.15	(assume green time advance/extend up to 10 sec.)

Prepared by Manuel Padron & Associates

24-May-00

Figure A-2: Run Time Estimate for Bus Rapid Transit Minimum Operating Segment

Italicized stations indicate on-street, rapid bus-type operations

STATION / LINE SECTION	PARKING	MAX. SPEED	DISTANCE (MILES) segment	DISTANCE (MILES) sta.-sta.	CUMUL. DIST. (MILES)	RUNNING TIME (MIN.)	DELAY TIME (MIN.)	*STA-STA TIME INCL. DWELL*	ELAPSED RUN TIME (MIN.)	EFFECTIVE SPEED (mph)
NORTH HOLLYWOOD	(RED LINE)				**0.00**				**0.00**	
on-street		35	0.73			1.41	0.37			
turn to Oxnard		35	0.10			0.17	0.05			
		35	0.84			1.54	0.42			
LAUREL CYN/OXNARD				*1.67*	**1.67**			*4.28*	**4.28**	23.39
		35	1.48			2.79	0.74			
FULTON/OXNARD				*1.48*	**3.15**			*3.86*	**8.15**	23.20
		35	0.50			1.11	0.25			
WOODMAN				*0.50*	**3.65**			*1.69*	**9.84**	22.25
		50	0.99			1.65	0.15			
VAN NUYS	1,060			*0.99*	**4.64**			*2.13*	**11.97**	23.27
		50	0.98			1.63	0.15			
SEPULVEDA	1,200			*0.98*	**5.62**			*2.11*	**14.08**	23.94
curves 405+00 to 444+00		50	0.77			1.24				
		50	0.40			0.62	0.15			
WOODLEY				*1.17*	**6.78**			*2.34*	**16.42**	24.79
curve 337+00 to 345+00		50	0.66			1.11				
		50	0.16			0.34	0.15			
BALBOA	240			*0.82*	**7.61**			*1.93*	**18.35**	24.87
no White Oak Station		35	2.00			3.68	1.00			
RESEDA/VICTORY				*2.00*	**9.61**			*5.02*	**23.37**	24.67
		35	1.00			1.97	0.50			
TAMPA/VICTORY				*1.00*	**10.61**			*2.81*	**26.18**	24.32
		35	1.59			2.98	0.80			
MASON/VICTORY	350			*1.59*	**12.20**			*4.11*	**30.28**	24.18
		35	0.55			1.20	0.28			
DESOTO/VICTORY				*0.55*	**12.75**			*1.80*	**32.09**	23.84
		35	0.20			0.51	0.10			
turn to Owensmouth		25	0.10			0.24	0.05			
on-street		35	0.96			1.77	0.48			
WARNER CENTER (Owensmouth)				*1.26*	**14.01**			*3.48*	**35.57**	23.64
Totals:	2,850		*14.01*			*25.94*	*5.63*	*35.57*		

	Dist. (Miles)	*Time (min)*	*Avg. Speed (mph)*	*Avg. Sta Spacing*
Eastern Section (Rapid Bus)	*3.65*	*9.84*	*22.25*	*1.22*
BRT Section	*3.96*	*8.51*	*27.91*	*0.99*
Western Section (Rapid Bus)	*6.40*	*17.21*	*22.32*	*1.28*
Totals:	***14.01***	***35.57***	***23.64***	***1.17***

Delay/Mile Rapid Bus sections:	*0.50*	min/mile

Average station dwell time:	20	secs =	0.33	minutes
Average intersection delay (no station):	0	(assume pre-emption)		
Average intersection delay at station:	*9*	secs =	0.14	(assume green time advance/extend up to 10 sec.)

Prepared by Manuel Padron & Associates

Figure A-3: 36-Minute Run Time Estimate of the BRT Alternative

Table 7: Warner Center to North Hollywood All-Stops BRT Service Performance

Station/ Intersection	Right of Way	Length Feet	Signal Delay Seconds	Max Speed mph	Dwell Seconds	Total Time Seconds	Speed mph
Warner City							
	Mixed	3200		30		103	21.25
Busway Start			18				
	Exclusive	1250		35		75	11.32
De Soto			18		20		
	Exclusive	2650		50		79	22.92
Mason Ave			0		20		
	Exclusive	2750		50		76	23.98
Winnetka Ave			18				
	Exclusive	1150		45		30	25.82
Victory Blvd			0				
	Exclusive	1700		50		43	27.07
Corbin Ave			12				
	Exclusive	2850		50		94	20.77
Tampa Ave			12		20		
	Exclusive	2700		55		52	35.49
Wilbur Ave			0				
	Exclusive	2650		55		80	22.65
Reseda Ave			18		20		
	Exclusive	2620		50		82	21.68
Lindley Ave			24				
	Exclusive	2680		50		77	23.66
White Oak Ave			18				
	Exclusive	6150		55		120	34.96
Balboa Blvd			18				
	Exclusive	450		25		42	7.35
Balboa Stop			0		20		
	Exclusive	4800		55		123	26.56
Woodley Ave			18		20		
	Exclusive	5500		55		114	32.93
Sepulveda Stop			0		20		
	Exclusive	650		30		45	9.91
Sepulveda Blvd			18				
	Exclusive	2700		50		53	34.62
Kester Ave			0				
	Exclusive	2000		50		46	29.56
Vesper Ave			8				
	Exclusive	650		30		45	9.91
Van Nuys Blvd			18				
	Exclusive	150		15		32	3.21
Van Nuys Stop			0		20		
	Exclusive	1150		40		31	25.68
Tyrone Ave			0				
	Exclusive	1350		45		37	25.21
Hazeltine Ave			8				
	Exclusive	2650		50		77	23.52
Woodman Ave			18				
	Exclusive	400		20		40	6.85
Oxnard St			18				
	Exclusive	250		15		36	4.68
Woodman Stop			0		20		
	Exclusive	3300		55		105	21.51
Valley College Stop			18		20		
	Exclusive	1750		45		40	30.15
Ethel Ave			0				
	Exclusive	400		35		21	13.28
Chandler Blvd			8				
	Exclusive	950		35		50	13.07
Coldwater Canyon Blvd			18				
	Exclusive	1350		35		35	26.59
Bellaire Ave			0				
	Exclusive	1200		35		23	35.00
Whitsett Ave			0				
	Exclusive	800		35		16	35.00
Corteen Ave			0				
	Exclusive	1850		35		61	20.75
Laurel Canyon Blvd			0		20		
	Exclusive	2700		35		61	30.22
Colfax Ave			0				
	Exclusive	1350		35		26	35.00
Chandler Bus Lns			0				
	Bus Lanes	1300		35		25	35.00
Tujunga Ave			0				
	Bus Lanes	2300		35		50	31.65
Lankershim Blvd							
Total		**74300**				**2143**	**23.64**

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Figure A-4: 40-Minute Run Time Estimate, the Upper Bound (UB) of the BRT Alternative (Based on 36-Minute Run Time Estimate, Figure A-3)

	Orig Time	MRI Time	UB Time	Orig Dist	MRI Dist	UB Time
chandler/lankershim	2.54	2.70	3.01	1.14	1.45	1.45
chandler/laurel cyn	2.74	4.10	4.59	1.56	1.57	1.57
burbank/fulton	1.81	1.75	1.93	0.73	0.63	0.63
oxnard/woodman	2.13	3.68	4.12	0.99	1.10	1.10
oxnard/van nuys	2.11	3.68	4.12	0.98	1.16	1.16
oxnard/sepulveda	2.34	1.90	2.10	1.17	1.04	1.04
woodley/victory	1.93	2.05	2.27	0.82	0.91	0.91
balboa/victory	3.41	5.35	6.00	2.18	2.25	2.25
reseda/oxnard	2.14	2.20	2.44	1.00	1.01	1.01
tampa/topham	2.23	2.78	3.10	1.10	1.08	1.08
winnetka/victory	2.14	2.62	2.91	1.00	1.02	1.02
desoto/victory	3.30	2.97	3.31	1.26	0.84	0.84
owensmouth/victory						
TOTAL	**28.82**	**35.78**	**39.92**	**13.93**	**14.07**	**14.07**

UB Run Time factor
1.13

Times are in minutes,
Distances are in miles

EXHIBIT VIII

RUN TIME CALCULATIONS FOR *METRO LINER* BUS TO BE UTILIZED ON ORANGE LINE

CORTEEN AVENUE TO LAUREL CANYON BLVD

Distance	1,850 ft	
Travel Speed (w/o acceleration/braking)	35 mph	
Stop at Beginning?	No	
Stop at End?	Yes	
Travel Times w/Braking to Stop	40.788609	seconds
Travel Speed w/Braking to Stop	30.924409	mph
Assume Constant rate of braking		
Distance Traveled	1,850	feet
Divided By: Travel Speed (w/o braking)	35	mph
Divided By: Feet/Mile	5,280	
Times: Seconds/Hour	3,600	
Time to Travel Distance @ Constant Spee	36.0390	seconds
Actual Travel Time w/Braking	40.7886	seconds
Time Lost to Braking from 35 to 0 mph	4.7496	seconds
Speed Prior to Braking	35	mph
Speed at End of Braking	0	mph
Total	35	
Divided by:	2	
Average Speed During Braking	17.5	mph
Time Spent in Braking	9.4993	seconds
Divided by: Seconds/Hour	3,600	
Times: Feet/Mile	5,280	
Distance Traveled During Breaking	243.82	feet
Distance Traveled at 35 mph	1,606.18	feet
Divided by: Travel Speed	35	mph
Divided by: Feet/Mile	5,280	
Times: Seconds/Hour	3,600	
Travel Time at 35 mph	31.2893	seconds
Total Travel Time	40.788609	seconds
(Equals Value from MTA model, thus proving calculation)		
Initial Travel Speed	35	mph
Deceleration Time	9.4993	seconds
Average Deceleration Rate	3.6845	mph/second

TAMPA AVENUE TO WILBUR AVENUE

Distance	2,700 ft	
Travel Speed (w/o acceleration/braking)	55 mph	
Stop at Beginning?	Yes	
Stop at End?	No	
Travel Times w/Accel from Zero	51.87121	seconds
Tavel Speed w/Accel from Zero	35.49	mph

Acceleration Statistics from 60-foot CNG Proposal

This bus cannot reach 55 mph in 2,700 feet

Time to travel 2,716 feet	56.15	seconds
Time to travel 2,507 feet	53.16	seconds
Difference in Feet	209	
Excess over 2,700 feet	16	
Excess as percent (1 -)	92.34%	
Difference in Time	2.99	seconds
Overage in seconds	2.76	
Time required to cover 2,700 feet	55.92	
Difference Over MTA Time	4.05	seconds

WHITE OAK TO BALBOA

Distance	6,150	
Travel Speed (w/o acceleration/braking)	55 mph	
Stop at Beginning?	Yes	
Stop at End?	Yes	
Travel Time, 0-55-0	101.9423	seconds
Tavel Speed, 0-55-0	34.96	mph

Acceleration Statistics from 60-foot CNG Proposal

Travel Time to 55 mph	85.21	
Travel Distance to 55 mph	4,926	

Braking Time/Distance:

Beginning Speed	55	mph
Ending Speed	0	mph
Total	55	
Divided by: 2	2	
Average Speed While Braking	27.5	mph
Beginning Speed	55	mph
Divided by: Rate of Acceleration	3.6845	mph/sec
Time to Decelerate	14.93	seconds
Divided: Feet/Mile	5,280	
Times: Seconds/Hour	3,600	
Distance Traveled During Deceleration	279.89	feet
Distance Traveled at 55 mph	944.11	feet
Divided by: Travel Speed	55	mph
Divided by: Seconds/Hour	3,600	
Times: Feet/Mile	5,280	
Time Traveled at 55 mph	25.18	seconds
Total Travel Time	125.31	seconds
Difference Over MTA Time	23.3715	seconds

EXHIBIT IX

TIME/SPEED/DISTANCE SCHEDULE FOR *METRO LINER* BUS

36.00	1651	2434	1753	233.7	2.78	851
38.00	1742	2291	1586	232.2	2.52	882
40.00	1834	2139	1408	228.1	2.23	907
42.00	1926	2059	1301	230.6	2.06	930
44.00	2017	2001	1216	234.8	1.93	954
46.00	2109	1907	1092	233.9	1.73	999
48.00	2201	1803	958	230.8	1.52	1047
48.53	2225	1774	921	229.5	1.46	1060

Forward 5, ratio= 0.737 -auto upshift, auto lockup shift

48.53	1640	1753	901	226.9	1.43	1136
50.00	1690	1699	824	226.5	1.31	1186
52.00	1757	1608	701	223.0	1.11	1253
54.00	1825	1518	578	218.5	0.92	1324
56.00	1893	1463	490	218.5	0.78	1404
58.00	1960	1421	413	219.8	0.65	1489
60.00	2028	1380	336	220.7	0.53	1582
62.00	2095	1322	241	218.5	0.38	1685
64.00	2163	1260	142	215.0	0.22	1793
66.00	2231	1194	37	210.1	0.06	1907
68.00	2298	1123	-72	203.7	-0.12	2028
68.06	2300	1121	-75	203.5	-0.12	2031

Note: * exceeds vehicle traction limit

SCAAN No 704340
date: 10/15/02, 5:46pm edt
tm887773, CUMMINS

ALLISON TRANSMISSION DIV
Vehicle Full Throttle Acceleration
Start With Brakes Locked
Clutch Fan Engaged

(on 0.00 percent grade)

speed mph	time sec	dist ft	accel mph/sec	eng rpm	gear range
1.00	0.18	0	5.705*	1676	1C
2.00	0.35	1	5.703*	1679	1C
3.00	0.53	1	5.104	1687	1C
4.00	0.74	2	4.621	1699	1C
5.00	0.97	4	4.130	1715	1C
6.00	1.23	6	3.638	1739	1C
7.00	1.53	9	3.180	1769	1C
8.00	1.87	12	2.750	1807	1C
9.00	2.27	17	2.361	1871	1C
10.00	2.72	24	2.055	1953	1C
10.71	3.07	29	1.999	2015	1C- 2C
11.00	3.22	31	2.030	1739	2C
12.00	3.73	40	1.888	1754	2C
13.00	4.28	50	1.750	1771	2C
14.00	4.88	62	1.618	1790	2C
15.00	5.53	76	1.492	1815	2C
16.00	6.23	92	1.376	1850	2C
17.00	6.99	110	1.273	1888	2C
17.62	7.49	123	1.213	1915	2C- 2L
18.00	7.75	130	1.426	1573	2L
19.00	8.47	149	1.364	1661	2L

20.00	9.23	171	1.273	1748	2L
21.00	10.06	196	1.174	1835	2L
22.00	10.94	224	1.116	1923	2L
23.00	11.85	254	1.074	2010	2L
24.00	12.81	287	1.013	2098	2L
24.89	13.72	319	0.951	2175	2L- 3L
25.00	13.83	324	1.009	1638	3L
26.00	14.85	362	0.961	1703	3L
27.00	15.93	403	0.900	1769	3L
28.00	17.08	450	0.843	1834	3L
29.00	18.30	501	0.807	1900	3L
30.00	19.57	556	0.778	1965	3L
31.00	20.88	614	0.750	2031	3L
32.00	22.25	678	0.713	2096	3L
33.00	23.70	747	0.673	2162	3L
33.59	24.59	790	0.649	2200	3L- 4L
34.00	25.24	823	0.629	1559	4L
35.00	26.85	904	0.612	1605	4L
36.00	28.52	991	0.591	1651	4L
37.00	30.25	1084	0.565	1696	4L

SCAAN No 704340

speed mph	time sec	dist ft	accel mph/sec	eng rpm	gear range
38.00	32.08	1184	0.535	1742	4L
39.00	34.01	1294	0.501	1788	4L
40.00	36.08	1413	0.474	1834	4L
41.00	38.24	1542	0.455	1880	4L
42.00	40.48	1678	0.438	1926	4L
43.00	42.81	1823	0.424	1972	4L
44.00	45.21	1976	0.410	2017	4L
45.00	47.71	2140	0.390	2063	4L
46.00	50.36	2316	0.369	2109	4L
47.00	53.16	2507	0.347	2155	4L
48.00	56.15	2716	0.324	2201	4L
48.53	57.82	2834	0.310	2225	4L- 5L
49.00	59.39	2946	0.299	1656	5L
50.00	62.85	3198	0.281	1690	5L
51.00	66.56	3472	0.261	1724	5L
52.00	70.58	3776	0.239	1757	5L
53.00	75.00	4116	0.216	1791	5L
54.00	79.90	4501	0.197	1825	5L
55.00	85.21	4926	0.182	1859	5L
56.00	90.99	5396	0.167	1893	5L
57.00	97.27	5916	0.153	1926	5L
58.00	104.11	6493	0.141	1960	5L
59.00	111.57	7133	0.129	1994	5L
60.00	119.80	7852	0.115	2028	5L
61.00	129.24	8690	0.099	2062	5L
62.00	140.36	9693	0.083	2095	5L
63.00	153.98	10942	0.066	2129	5L
64.00	171.71	12593	0.049	2163	5L
65.00	197.44	15029	0.032	2197	5L
66.00	246.41	19738	0.014	2231	5L
66.69 = maximum speed					5L

(on 0.00 percent grade)

NOTE: * Indicates acceleration limited by wheel slip

EXHIBIT X

AMERICAN PUBLIC TRANSPORTATION ASSOCIATION STANDARD BUS PROCUREMENT GUIDELINES – LOW FLOOR CNG (EXCERPT)

STANDARD BUS PROCUREMENT GUIDELINES
LOW FLOOR CNG

FOR 35/40 FOOT HEAVY-DUTY, LOW FLOOR, COMPRESSED NATURAL GAS (CNG) POWERED TRANSIT BUS

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5.1 GENERAL

5.1.1 SCOPE

Part 5: Technical Specifications define requirements for a heavy duty, low floor, Compressed Natural Gas (CNG) powered transit bus which, by the selection of specifically identified alternative configurations, may be used for both suburban express service and general service on urban arterial streets. It shall have a minimum expected life of 12 years or 500,000 miles which ever comes first and is intended for the widest possible spectrum of passengers, including children, adults, the elderly, and persons with disabilities.

5.1.2 DEFINITIONS

The following are definitions of special terms used in Part 5.

(1) dBA. Decibels with reference to 0.0002 microbar as measured on the "A" scale.

(2) Audible Discrete Frequency. An audible discrete frequency is determined to exist if the sound power level in any 1/3-octave band exceeds the average of the sound power levels of the two adjacent 1/3-octave bands by 4 decibels (dB) or more.

(3) Standee Line. A line marked across the bus aisle to designate the forward area that passengers may not occupy when the bus is moving.

(4) Free Floor Space. Floor area available to standees, excluding the area under seats, area occupied by feet of seated passengers, the vestibule area forward of the standee line, and any floor space indicated by manufacturer as non-standee areas such as, the floor space "swept" by passenger doors during operation. Floor area of 1.5 square feet shall be allocated for the feet of each seated passenger that protrudes into the standee area.

(5) Curb Weight. Weight of vehicle, including maximum fuel, oil and coolant; and all equipment required for operation and required by this Specification, but without passengers or operator.

(6) Seated Load. One hundred fifty pounds for every designed passenger seating position and for the operator.

(7) Gross Load. One hundred fifty pounds for every designed passenger seating position, for the operator, and for each 1.5 square feet of free floor space.

(8) SLW (Seated Load Weight). Curb weight plus seated load.

(9) GVW (Gross Vehicle Weight). Curb weight plus gross load.

(10) GVWR (Gross Vehicle Weight Rated). The maximum total weight as determined by the vehicle manufacturer, at which the vehicle can be safely and reliably operated for its intended purpose.

(11) GAWR (Gross Axle Weight Rated). The maximum total weight as determined by the axle manufacturer, at which the axle can be safely and reliably operated for its intended purpose.

(12) Heavy Heavy-Duty Gas Engine (HHDG). Heavy heavy-duty gas engines have sleeved cylinder liners, are designed for multiple rebuilds, and a rated horsepower that generally exceeds 250.

(13) Operator's Eye Range. The 95th-percentile ellipse defined in SAE Recommended Practice J941, except that the height of the ellipse shall be determined from the seat at its reference height.

(14) Fireproof. Materials that will not burn or melt at temperatures less than 2,000° F.

(15) Fire Resistant. Materials that have a flame spread index less than 150 as measured in a radiant panel flame test per ASTM-E 162-90.

(16) Human Dimensions. The human dimensions used in Part 5: Technical Specifications are defined in Humanscale 1/2/3, N. Diffrient, A. R. Tilley, J. C. Bardagjy, MIT Press.

(17) HIC (Head Injury Criteria). The following equation presents the definition of head injury criteria:

$$\left[\frac{1}{t_1 - t_2} \int_{t_2}^{t_1} (a)\, dt \right]^{2.5} (t_2 - t_1)$$

where:

a = the resultant acceleration at the center of gravity of the head form expressed as a multiple of g, the acceleration of gravity.

t_1 and t_2 = any two points in time during the impact.

(18) Baseline Configuration Bus. The bus described by Part 5: Technical Specifications if no alternatives are selected. Signing, colors, the destination sign reading list and other information must be provided by the Procuring Agency in attachments to Part 5: Technical Specifications.

(19) Alternative. An alternative specification condition to the baseline configuration bus. The Procuring Agency may define alternatives to the baseline configuration to satisfy local operating requirements. Alternatives for the baseline configuration will be clearly identified.

(20) Design Operating Profile. The operating profile for design purposes shall consist of simulated transit type service. The duty cycle is described in the figure "Transit Bus Duty Cycle." The duty cycle consists of three phases to be repeated in sequence: a central business district (CBD) phase of 2 miles with 7 stops per mile and a top speed of 20 mph, an arterial route phase of 2 miles with 2 stops per mile and a top speed of 40 mph, and a commuter phase of 4 miles with 1 stop and a maximum speed of 55 mph and a 5 minute idle phase.

Phase	Stops/ Mile	Top Speed (mph)	Miles	Accel. Dist. (ft.)	Accel. Time (s)	Cruise Dist. (ft.)	Cruise Time (s)	Decel. Rate (fpsps)	Decel. Dist. (ft.)	Decel. Time (s)	Dwell Time (s)	Cycle Time (min-s)	Total Stops
CBD	7	20	2	155	10	540	18.5	6.78	60	4.5	7	9-20	14
Idle	-	-	-	-	-	-	-	-	-	-	-	5-0	-
Arterial	2	40	2	1035	29	1350	22.5	6.78	255	9	7	4-30	4
CBD	7	20	2	155	10	510	18.5	6.78	60	4.5	7	9-20	14
Arterial	2	40	2	1035	35	1350	22.5	6.78	255	9	7	4-30	4
CBD	7	20	2	155	10	510	18.5	6.78	60	4.5	7	9-20	14
Commuter	1 stop for phase	Max. or 55	4	5500	90	2 miles + 4580 ft.	188	6.78	480	12	20	5-10	1
Total			14									47-10	51
Average Speed - 17.8 mph													